Brick & Clay Record

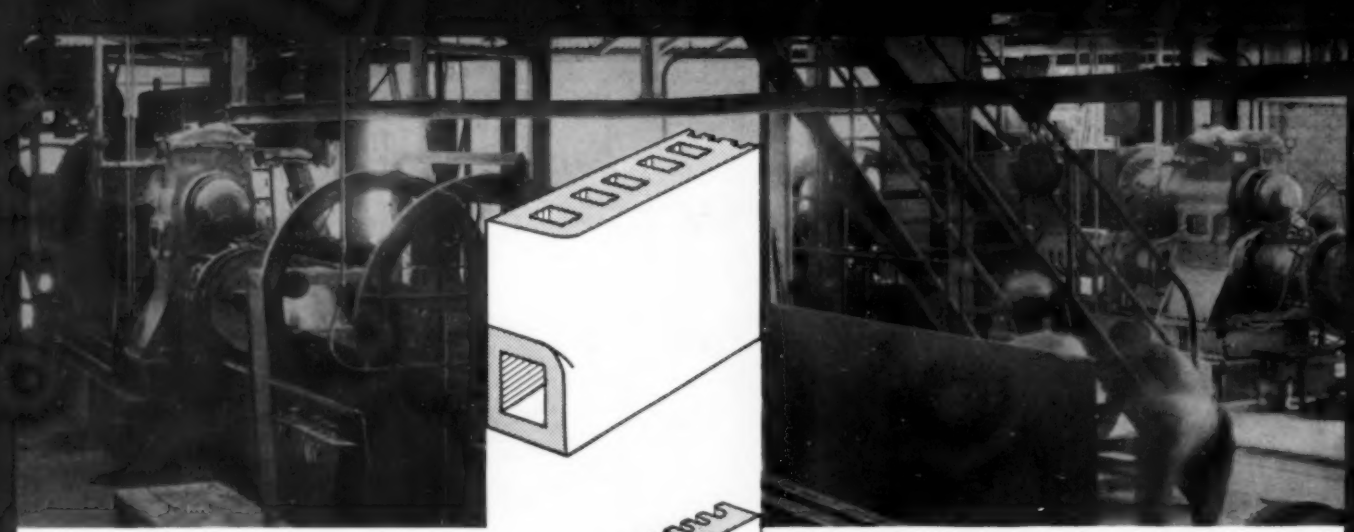
OCTOBER
1957

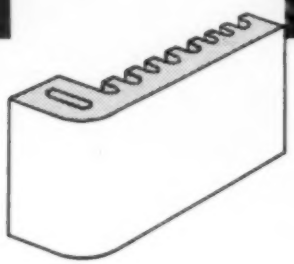
Brick
Refractories
Structural Tile
Sewer Pipe
Drain Tile
Terra Cotta
Roofing Tile
Clay Aggregate

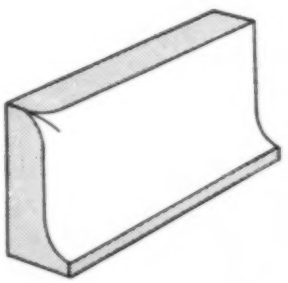
Is This Brick Construction Of The Future?

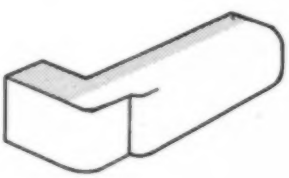
BCR Announces: A Ten-Year Plan For Industry Growth

ANNUAL
SCPI
CONVENTION
ISSUE









Metropolitan

keeps production of ceramic glazed structural facing tile on profitable schedule in Minerva plant with

BONNOT "BIG 3"

Three Bonnot extruders (Greyhounds engineered to the user's specific requirements) are KEY PROFIT POINTS on all three production lines for ceramic glazed structural facing tile in the Minerva (Ohio) Plant of Metropolitan Brick, Inc.

Long-time users of Bonnot equipment in all plants, Metropolitan specified for newly-expanded facilities at Minerva, a third Bonnot extruder because of previous experience with their ruggedness, versatility and proven production economies in manufacturing QUALITY GLAZEDWARE.

Of course, each successive machine has embodied valuable new features for improved operating and simplification of maintenance without defeating the advantages of interchangeable wearing parts.

With two extruders in continuous operation for stretchers and other standard structural tile units, the third Bonnot machine is used for special shapes. Thus the entire order can be completed in the fastest, most economical way without disturbing the continuous flow of regular shapes and colors.

Custom-engineering of every Bonnot machine to individual raw materials and production needs, ADDS UP to less down-time and greater production for those who are responsible for production . . . better quality ware for those responsible for sales and profits.

STEP AHEAD WITH BONNOT

CRUSHERS
HAMMER MILLS
DRY PANS
WET PANS
GRINDERS
FEEDERS
MIXERS
PUG MILLS
AUGER MACHINES
VACUUM MACHINES
SPECIAL EXTRUDERS
CUTTERS
REPRESSES
DIES

SPECIAL MACHINES TO ORDER

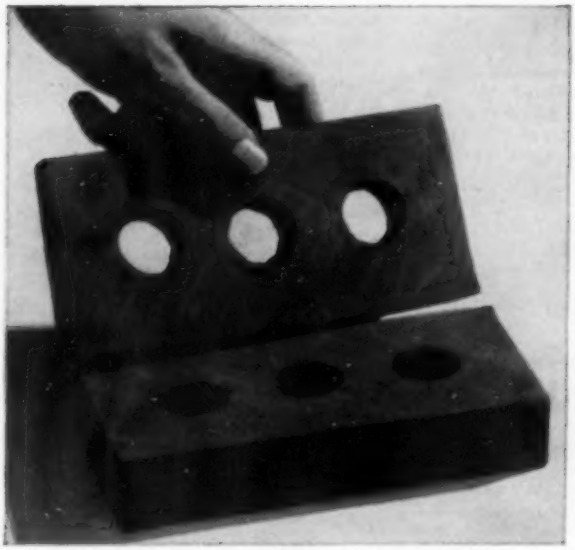
DIRECT FOUNDRY SERVICE

JUST OUTLINE YOUR NEEDS
FOR PROMPT ENGINEERING ACTION BY BONNOT

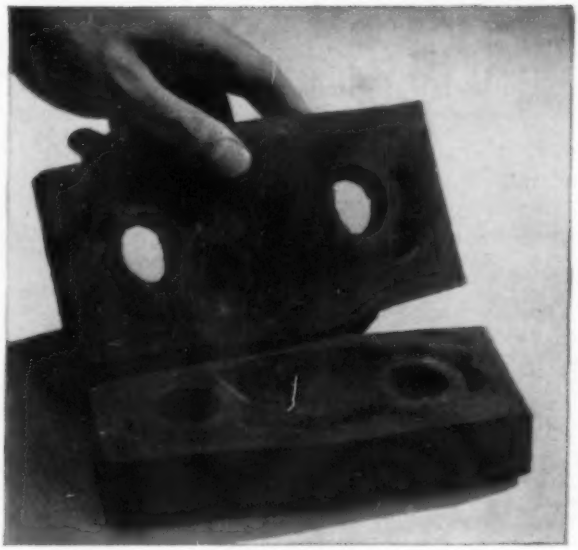
Circle No. 4 on the Reader Service Card

The BONNOT Co.
CANTON 2, OHIO

Rugged Machines for Constant Low Cost Operation — BONNOT'S The Buy



This brick contains Spencer BRICKAID, the revolutionary brick additive that will reduce or eliminate black coring.



This brick had none of the protection your bricks get from Spencer BRICKAID. Cored bricks lose shape, too.

Spencer Chemical Company announces:

New Spencer BRICKAID That Will Reduce Or Eliminate Black Coring

Revolutionary new brick additive also cuts dryer loss over 70%, cuts firing time up to 10%, reduces firing schedule up to 16% . . .

You can reduce or eliminate black coring if you use Spencer Chemical Company's magical new brick additive—BRICKAID. That's the conclusion indicated by a series of scientific tests recently conducted at the factory of one of America's leading brick makers. In all cases black coring was cut at least 50%.

Dryer loss was cut 70% and more in these same tests. An average daily loss of 800 bricks was reduced to 200 bricks per day when Spencer BRICKAID was added to the mix.

BRICKAID reduced firing time, too— often as much as 10%, and it has shortened firing schedules up to 20%. Yet the product quality was, if anything, improved, and there was no increase in water absorption.

Green strength increases when you use Spencer BRICKAID. And BRICKAID helps make lighter colored brick from buff-burning clays.

It's easy to use BRICKAID. Just add it to the waterline leading to the pug. In a 10-month test of the material in use, no sign of deterioration or corrosion was found in any plant equipment exposed to BRICKAID.

Result of a $60,000 research project. BRICKAID was created by Spencer Chemical Company to help you increase quality control of bricks at lower production costs. Spencer is the same company that has recently developed a special boilable polyethylene, a test-proven superior pipe resin, and resin for a glass-clear polyethylene film.

For complete information on BRICKAID write Sales Manager, Chemicals; Spencer Chemical Co., Dwight Bldg., Kansas City, Mo.

SPENCER® **Brickaid**™

BRICK ADDITIVE

"Brick & Clay Record is published monthly by Industrial Publications, Inc., 5 S. Wabash, Chicago 3, Ill. Subscription price: U. S. A. and Canada, $5.00 per year; three years, $10.00; Foreign subscription price: $7.00 per year; three years, 15.00. Vol. 131, No. 4. Entered as Second Class Matter January 2, 1911, at the Post Office at Chicago, Ill., under the Act of March 3, 1879. Additional entry at Pontiac, Ill.

LETTERS To the Editor

SCPRF Report

Editor, BRICK & CLAY RECORD — Congratulations for the fine publicity in August, 1957 issue that you are giving Bob (Robert Taylor, director of SSCPRF) for his marvelous work.

Bill Coates
The Coates Co.
Austin, Tex.

Ed. Note: We'd like to thank Bill Coates for his telegram concerning the August stories on the Survival House and the SCPRF meeting. More on the fine work of SCPRF appears in this issue, including a story on the new house in Geneva, Ill., that used the SCPRF panels.

Oldest Plant (Continued)

Editor, BRICK & CLAY RECORD—In regard to the oldest plant in operation and being operated by same family, as asked by Red Bruno . . . I will refer you to the Stork Brick Co., Columbia, S. C.

The Stork Brick Co., manufacturers of fire brick, was started in 1832 by Dr. Landrum, succeeded by a son Linius Landrum, succeeded by Mr. Stork, grandson of Dr. Landrum, and now operated by the great-grandson, Raymond Stork. This plant has always remained small, producing about 20,000 fire brick per month. They are still in operation. . . .

L. R. Whitaker,
Carolina Ceramics, Inc.
Columbia, S. C.

Editor, BRICK & CLAY RECORD — We overlooked writing you after first noting in the June issue that Mr. Bruno raised the question about the oldest brick plant. In the August issue, Bonnot Co's. J. G. Seanor mentions a plant at New Oxford, Pa., which he recalls having been in continuous operation since the 1840's.

Actually, and for the purpose of keeping the record straight, the writer's grandfather, Peter S. Alwine, was the founder of our company in 1851.

While 106 years is a long span of years, there are doubtless others older still.

Charles E. Alwine, Pres.
Alwine Brick Co.
New Oxford, Pa.

Editor, BRICK & CLAY RECORD—In reply to Mr. L. V. Bruno's and Mr. K. T. King's references to "oldest going brick business" my company has always been owned 100% by heirs of original founder—my grandfather.

L. Perry West
West Bros. Brick Co.
Washington, D. C.

Ed. Note: *In this note to us, West also included a company booklet which points out that West Brothers Brick was founded in 1884, by John Parker West. The company was reported to be the 14th oldest business concern in Washington.*

Oldest Clay (?)

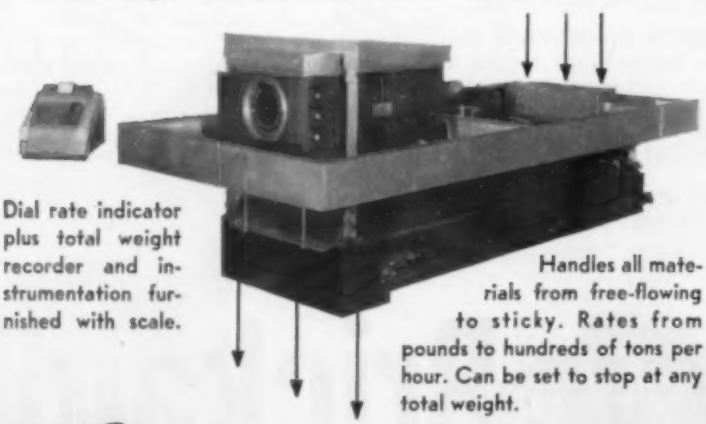
Editor, BRICK & CLAY RECORD — We have read with much interest your controversial letters in recent issues . . . concerning the oldest brick plant in continuous operation in the United States.

At a called meeting of the Board of Directors to discuss this claim, our

(Continued on page 89)

NEW Thayer BELT FEEDER
CONTINUOUS WEIGHING

Only Thayer Scales have the Thayer Plate Leverage System that is guaranteed accurate for the life of the scale.

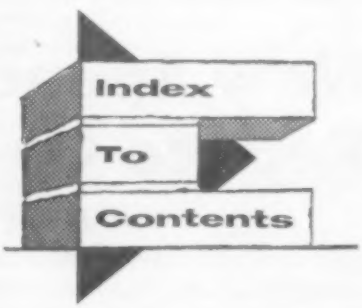


Dial rate indicator plus total weight recorder and instrumentation furnished with scale.

Handles all materials from free-flowing to sticky. Rates from pounds to hundreds of tons per hour. Can be set to stop at any total weight.

THE Thayer SCALE

BATCHING • FILLING • CHECKING — AUTOMATICALLY BY WEIGHT
AUTOWEIGHTION
THAYER SCALE CORP., 12 THAYER PARK, PEMBROKE, MASS.



Our Industry's Growth
Special section on ways, means, methods to greatly increase our industry size and sales 51

Panel House
All the brick in a house put up in 8½ hours by SCPRF 48

Color at Columbia B&T 65

Ochs' Hundred Pack 69

Kraftile Quality Control 71

Plant of Tomorrow; Clemson 72

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News of the Industry 40

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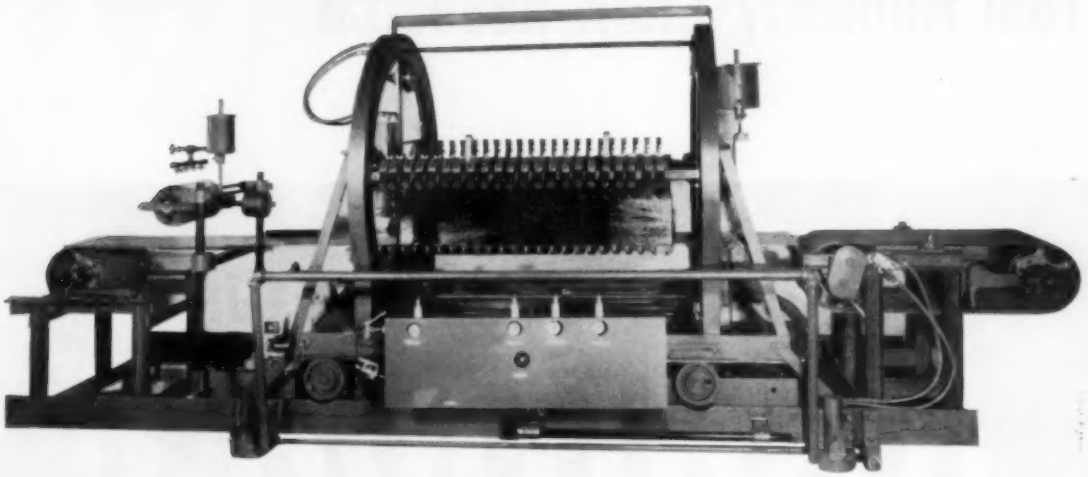
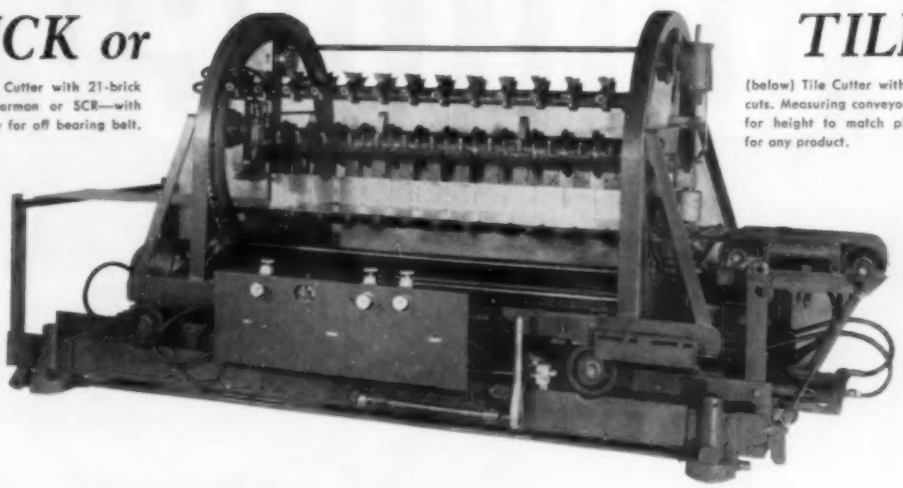
CHAMBERS MAKES THE CUTTERS FOR YOUR JOB!



BRICK or

(above) Brick Cutter with 21-brick platen—8" norman or SCR—with built-in pulley for off bearing belt.



TILE

(below) Tile Cutter with 12 5"-tile cuts. Measuring conveyor adjustable for height to match platen levels for any product.

CAPACITY IN CROSS SECTIONS

#32 & #33	14" x 14" 12" x 16" 8" x 18"	Green	#30 & #31	11" x 11" 9" x 13½"	Green

SPEED

Max. operating: 18 Cuts/Min.

CONTROL SYSTEM — Reciprocating motions are under air control, with tied-in air clutches to actuate rotary motion. All actuating cams are adjustable to fit any production problem, and the control valves in the main panel supply sensitive control adjustment during operation.

PLATENS—For either brick or tile, platens are built at any level to provide optimum wire cutting angles. The unique Chambers adjustable platen is ideally suited for refractories manufacture. All platens are quick-change units that do not disturb the alignment of the reel and gear assembly. In any model, platen lengths of 42", 54", or 68" can be supplied. Maximum number of brick: 27 per cut. Maximum length of tile: 5 12" pieces.

SPECIAL FEATURES—Measuring conveyor (Std., 2') can be built in any length to suit plant conditions. Off bearing belt tail pulley with take-up can be supplied with cutter (see Brick Cutter above). Lifting jack assembly can be motorized on order.

ADJUSTMENTS—One-point leveling and side adjustment guarantees perfect alignment with extruder. Measuring belt can be built with vertical adjustment if platens of different levels are used (see Tile Cutter above).

Write today for further details

SERVING YOUR INDUSTRY FOR 100 YEARS

CHAMBERS BROTHERS CO.

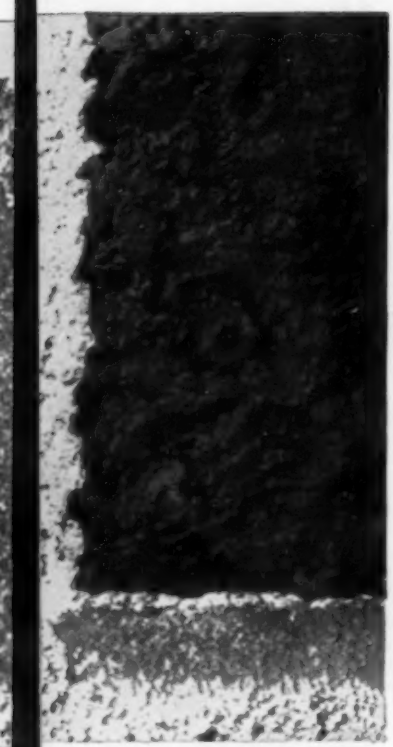
1857 1957

52nd & Media Streets · PHILADELPHIA 31, PA.

From Kimberly-Clark Research

KIMBERLY-CLARK Additive A is a new liquid clay conditioner easily added to the tempering water with multiple benefits in brick, structural clay products and clay pipe production. It greatly improves plasticity and strength, results in more efficient production, higher yields and more profitable operation.

Kimberly-Clark Additive A is the result of six years of laboratory experimenting and three years of plant testing. It is a field-tested product now being used to advantage in the production of millions of brick and tile.



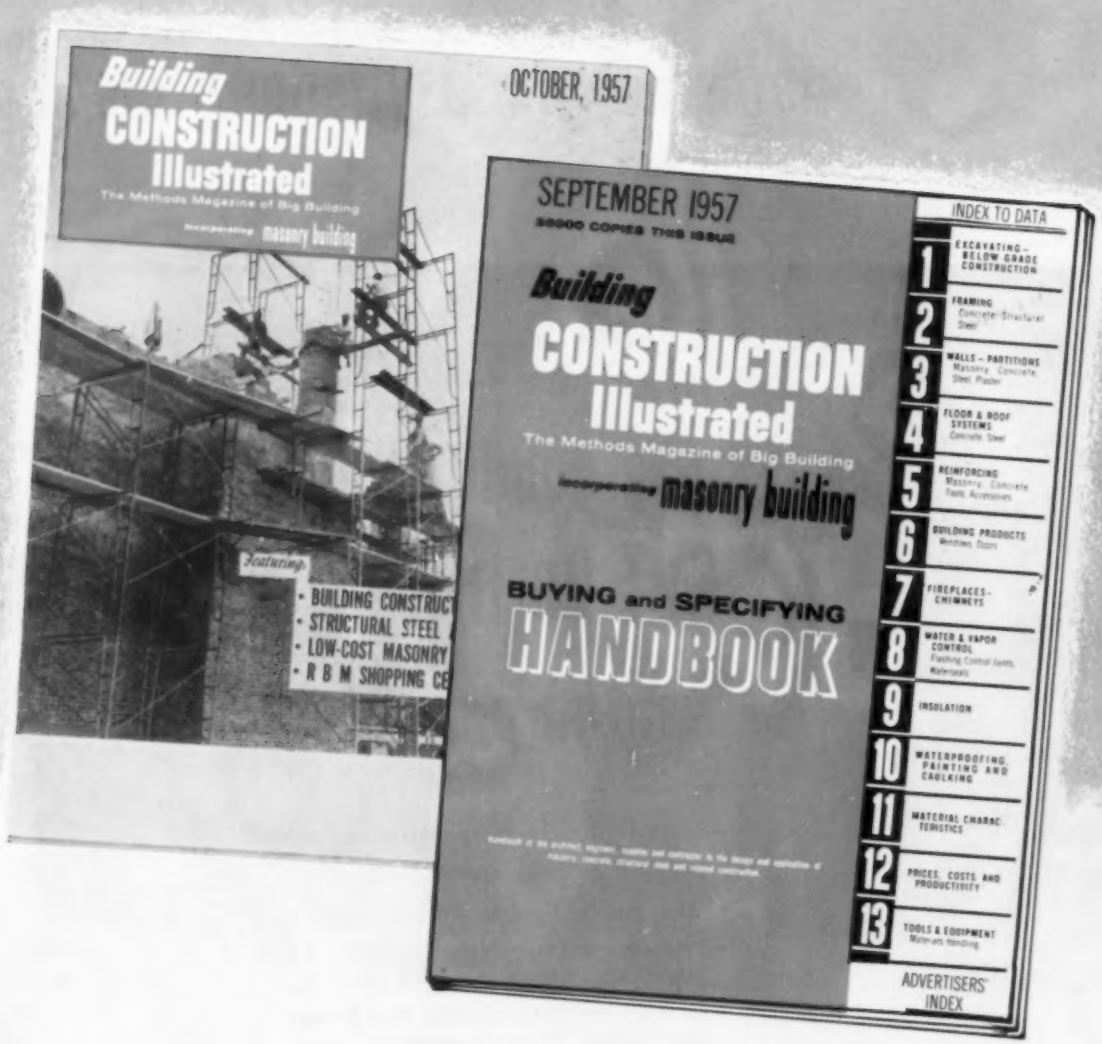
A complete clay conditioner with all these wanted benefits

- Increases plasticity and promotes even temper.
- Body lubrication reduces lamination.
- Increases life of augers, dies and liners.
- Promotes even flow through the die with reduced power consumption.
- Increases wet green strength. Ware is more easily hacked without damage.
- Allows faster drying at higher temperatures yet markedly reduces drier cracks.
- Permits block or package setting.
- Produces cleaner, brighter colors.
- Less shrinkage—more uniformity in size.
- General upgrading of all ware.

Kimberly-Clark Corporation, Neenah, Wisconsin

See us at the Greenbrier...

Our engineers will be at the Structural Clay Products Institute annual convention at the Greenbrier, November 11 through 13 with the Additive-A story. See for yourself production run samples from plants now using Additive-A. We will show you how losses have been cut and quality of the product upgraded.



An old friend in a new package

Above are two typical covers of the new BUILDING CONSTRUCTION ILLUSTRATED, incorporating Masonry Building.

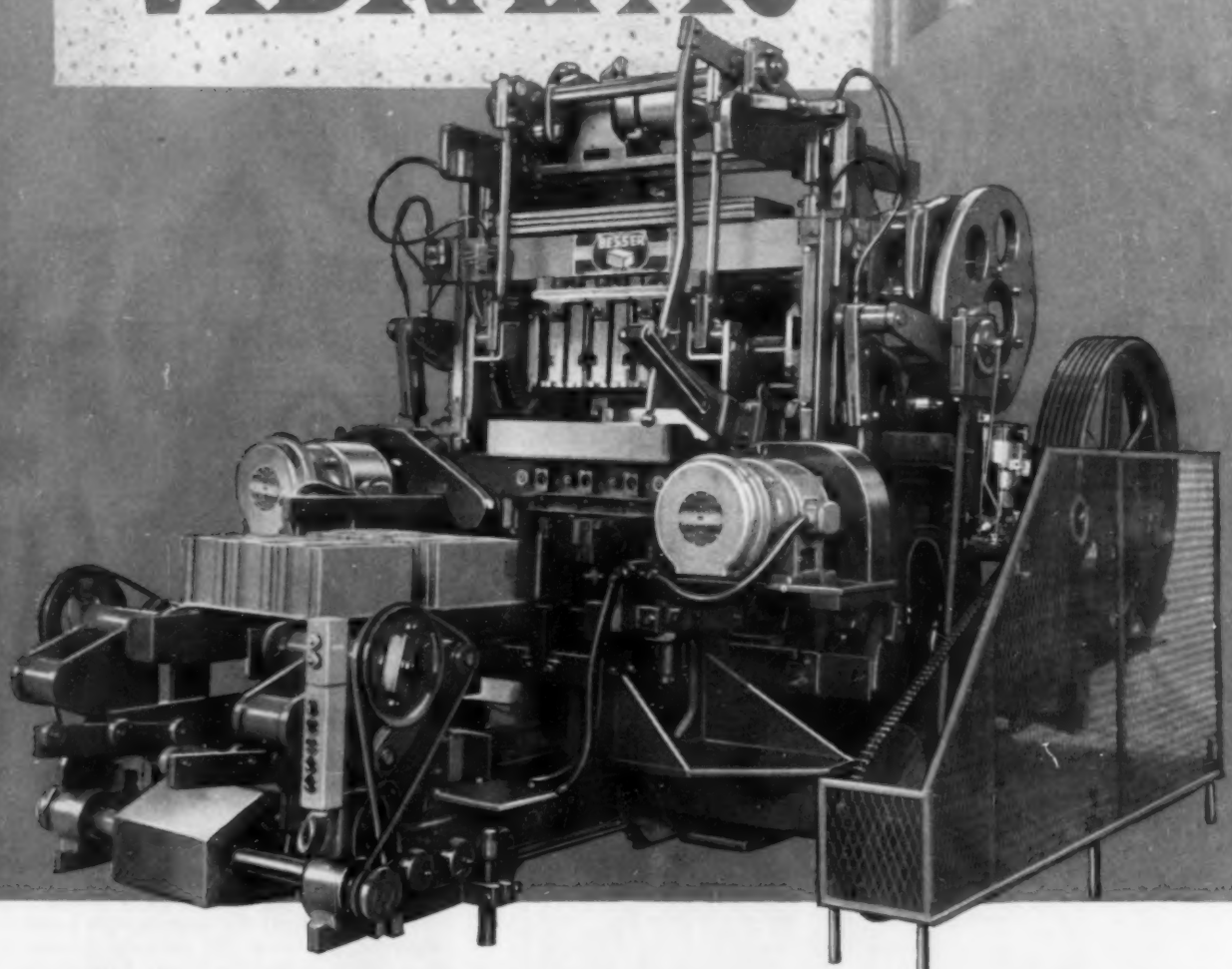
Upper right represents the BCI September Buying & Specifying Handbook, the industry's most complete compilation of construction charts, data and estimating tables of interest to those concerned with big building.

Upper left is a reproduction of how BUILDING CONSTRUCTION ILLUSTRATED (incorporating Masonry Building) will come to you each month.

Building CONSTRUCTION Illustrated

5 So. Wabash Ave. Chicago 3, Ill.

BESSER VIBRAPAC



The choice of leading block makers

World-famous concrete block machine — fully automatic, including front feeding of pallets • Produces high quality block in all types and sizes on one set of Plain Pallets—faster—more economically • Operated by the famous Besser cam and roller principle of power application • Automatic feed control — feeding by "guess" is eliminated • Two 10 h.p. motors give undirectional vibration under 2000 lbs. pressure • Instantaneous mold release — quick attachment change • Anti-friction bearings throughout • Automatic lubrication while the machine is running — all bearings fully protected.

Ask your nearby Besser representative for complete information.

BESSER Company

World's Leading Manufacturer of Block Machinery

BOX 139, ALPENA, MICHIGAN, U. S. A.

A 6-117

KOEHRING WORK CAPACITY *in action . . .*

Here are some figures that will interest you:

KOEHRING MODEL	SIZE DIPPER	LIFT CAPACITIES (Crawler ratings based on 75% of tipping load. Rubber-tired machines — 85% of tipping load.)	
205 CRAWLER	½-Yd.	20,000 lbs.	at 10-ft. radius
205 ON RUBBER	½-Yd.	30,000 lbs. 14,600 lbs.	at 12-ft. radius at 20-ft. radius
305 CRAWLER	¾-Yd.	30,000 lbs.	at 12-ft. radius
305 ON RUBBER	¾-Yd.	50,000 lbs. 15,800 lbs.	at 10-ft. radius at 30-ft. radius
405 CRAWLER	1-Yd.	40,000 lbs.	at 12-ft. radius
445 ON RUBBER	(Crane only)	90,000 lbs. 40,000 lbs.	at 15-ft. radius at 25-ft. radius
605 CRAWLER	1½-Yds.	72,300 lbs.	at 12-ft. radius
805 CRAWLER	2-Yds.	104,200 lbs.	at 12-ft. radius
1205 CRAWLER	3-Yds.	190,000 lbs.	at 12-ft. radius

Want more information? *See Koehring distributor*

Solid footing on soft banks — Loading gravel off the bottom of a water-filled pit, Koehring 405 dragline (above) holds firmly to the edge of soft, loose banks. Stability of its extra-long, extra-wide crawlers shows up to good advantage in conditions like this. Extra stability means extra work-capacity, too. The heavy-duty 405 handles 1 to 1½ cubic-yard dragline or clamshell buckets on a wide work-radius — boom lengths range from 40 to 90 feet. Butt-connected boom is solid, safe. Inserts are easily changed. Check the 405's other work capacities (in chart) — then have Koehring distributor demonstrate what it will do on your lifting, loading, stripping, stockpiling.

Quarry rock — ¾-yard 305 loads out Lannon stone in a Mid-West quarry. It's a rugged rock shovel, with exceptional operating ease. Big 23-inch main-drum power clutch requires only 1/10th the lever-pull of a comparable-size manual clutch — yet, retains "feel" of load.

15-ton handyman — With its heavy lift capacity and high-speed mobility, Koehring 205 truck crane is a handy material-handling rig to have around. It unloads heavy equipment and supplies, installs machinery — converts to ½ to ¾-yd. clamshell or dragline, ½-yd. shovel, hoe.

Big stripper — Look at the work range of this big 1205 high-lift shovel. It digs up to a height of 42 ft.-10 in. at 45° boom angle — dumps at a height of 31 ft.-5 in. That's with a 3-yard dipper on 40-foot boom. *Need more reach?* It also takes a 2½-yard dipper on a 50-foot boom — has 51 ft.-4 in. cutting height, and 40 ft.-10 in. dumping height, at 45° angle! For heaviest digging, the standard 1205 has 3-yard dipper on 30-foot boom. On dragline or clamshell work, it handles 3 to 4-yard buckets on 60 to 170 feet of boom. *Want more facts?* See Koehring distributor for complete story on this big 1205. Call today.

KOEHRING DIVISION OF KOEHRING COMPANY, Milwaukee 16, Wis.

Another **STANLEY STEEL STRAPPLICATION*** on the job

Photograph: New Jersey Shale Brick & Tile Co.

This man . . . is eliminating 49 handling operations!

Before this New Jersey brick manufacturer started using the Stanley "Uni-Pac" method and the Stanley Electric Skid Magazine Tool, loading 400 bricks on a truck required 50 operations. Using tongs, 8 bricks at a time were transferred from loading platform to truck. Now, 400 bricks, steel-strapped into a "Uni-Pac," are loaded in ONE operation! With manual handling, 3 men required ONE hour to load a truck (8,000 bricks). With Stanley "Uni-Pac" handling, ONE man requires only ONE-QUARTER hour to do the same job!

Bricks can be secured into a compact, easy-to-handle "Uni-Pac" by applying steel strapping with the Stanley ESM Tool, which power-tightens each band to a pre-determined tension, with equal pull on every band. The Stanley Steel Strapping Specialist can show you how to devise a "Uni-Pac" that will be just the right size to meet your specific requirement.

WRITE FOR YOUR FREE COPY of the "Stanley Strapplication Manual of Packaging and Shipping" to **STANLEY STEEL STRAPPING,** Division of The Stanley Works, Dept. J, 1146 Lake Street, New Britain, Connecticut.

INSURE IT-SECURE IT-WITH STANLEY STEEL STRAPPING

STANLEY

**The system-atic way to solve specific packaging and shipping problems*

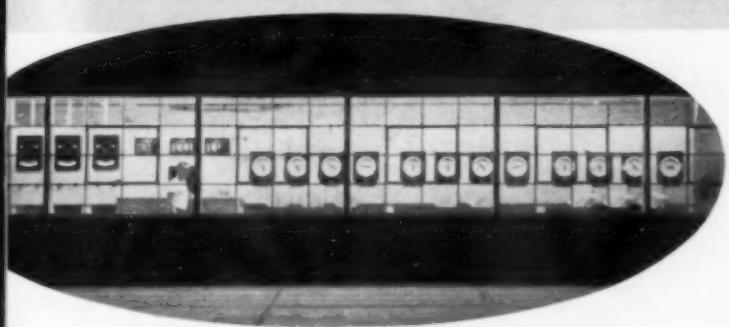
STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

SERVING WELL at

BELDEN BRICK CO.

• SUGARCREEK, OHIO PLANT •

3 MULTI-BURNER DRESSLER KILNS



Four zones of automatic temperature control per kiln plus automatic pressure control provide close firing regulation.

Cooling and furnace zone sections of Number 1 Kiln.

After 18 months of operation, these Dressler Kilns have run up performance records equal to the most optimistic expectations. Their ability to control firing and preheating curves is remarkable. With a severe pyrites oxidation problem, a 55° F. range can be maintained for approximately 70 feet in the preheating zone, equal to no less than 27% of the heating cycle. Flashing facilities are such as to permit accurate, uniform reproducibility of flash after any production interval. Fuel consumption continues to be considerably below the average in the face brick industry. And a final note—the tapered roller bearing kiln cars (a Dressler "first" in the structural clay industry) remain free-moving as ever, with tests showing regreasing required only at 12-to-18-month intervals. • Interested in outstanding kiln performance on your own clay products? Let us consult with you, now.

SWINDELL-DRESSLER Corporation

DESIGNERS AND BUILDERS OF MODERN INDUSTRIAL FURNACES

PITTSBURGH 30, PA.

Swindell-Dressler Corporation provides a complete engineering service for the ceramic industry in the design and construction of new plants, and modernization of existing facilities. Consultations arranged gladly on request.

Materials Equipment Services

COLORS—Glaze stains in brilliant shades and pastels in a wide color range and stable at high temperature are offered by Drakenfeld. Strong, uniform body or engobe stains for colored bodies for slip application also come in many shades. B. F. Drakenfeld & Co., 45 Park Pl., N.Y.C. 7.
639/Circle on Reader's Service Coupon

HEAT MEASUREMENT — Bell Fire-Chek Keys placed in various parts of the kiln shrink due to the heat, not the atmosphere of kiln, indicating the effect of the temperature on clay. Accurate measurement is possible with Bell's gauge. Bell Research Inc., E. Liverpool, Ohio.
640/Circle on Reader's Service Coupon

POWER CYLINDERS—Over 100 factory trained, experienced engineers are at your service to help you fill your air and hydraulic cylinder needs. Miller Fluid Power Div., Flick-Reedy Corp., 2013 N. Hawthorne Ave., Melrose Park, Ill.
641/Circle on Reader's Service Coupon

GLAZE STAINS—New 600 series chrome alumina pinks are said to have been improved for purer colors without "brown spots." Low initial cost and stability to Cone 12 are claimed. The 4000 series consists of zirconium-vanadium yellows, greens, and blues. Vitro Mfg. Co., 60 Greenway Dr., Pittsburgh 4, Pa.
642/Circle on Reader's Service Coupon

TRACTOR SHOVELS—The first Michigan Tractor Shovel Model 75A built is still in operation. The machine has put in 10,000 working hours, moving an average of 60,000 pounds per hour. Repair costs have been $700 for three years. Clark Equipment Co., 2455 Pipestone Rd., Benton Harbor 18, Mich.
643/Circle on Reader's Service Coupon

REAR DUMPS—At a German limestone quarry, two Model C Tournapulls are reported to haul about 180 tons of rock each working hour. Bowl design tends to deflect loading shocks, and load to 85-90% of capacity while box-shaped bodies stopped at 70%. LeTourneau-Westinghouse Co., Peoria, Ill.
644/Circle on Reader's Service Coupon

CAR TOPS—Paco claims 9 out of 10 users of their car tops are satisfied customers, and that all report replacement savings up to 50%. North State Pyrophyllite Co., Inc., Greensboro, N.C.
645/Circle on Reader's Service Coupon

LOW COST CRUSHING—with better product control is offered in the Williams Reversible Impactor. No grates are required; quick, uniform reduction, sizing, and discharge from the mill eliminates any grinding attrition action that causes excessive wear, especially with abrasive materials. Reversible rotation eliminates manual turning of hammers and minimizes down time. Williams Patent Crusher & Pulverizer Co., 2709 N. Broadway, St. Louis 6, Mo.
646/Circle on Reader's Service Coupon

INSULATING FIREBRICK—From 18 to 30% fuel savings have been reported with use of B&W insulating firebrick. A glazed sewer tile plant with seven 32' diameter coal fired circular kilns reported a 30% fuel saving; a building brick plant with four 28' coal fired kilns reported a 26% saving. Babcock & Wilcox Co., Refractories Div., New York 17, N. Y.
647/Circle on Reader's Service Coupon

LUBRICANT—Kiln car bearings are lubricated at temperatures up to 1200 F. Belco #5016 Grease is guaranteed not to carbonize, does not harden, forms no decomposition products, eliminates dripping on tracks, cuts down pusher ram pressures, and prevents bumper damage. Bel-Ray Co., Inc., Madison, N. J.
648/Circle on Reader's Service Coupon

FORK TRUCKS—A new line of pneumatic-tired gas fork trucks has been introduced by Baker. Model FGF-40, 4,000 lb. Yard-loader features power steering, single or dual wheels and full 130 inch lift with single or dual cylinder. Baker-Raulang Co., 1271 W. 80th St., Cleveland 2, Ohio.
649/Circle on Reader's Service Coupon

PAYLOADER—Has bucket sizes from 14 cu. ft. to 2¼ cu. yd. which can be tipped back, lifted and dumped by one lever. Floor sweeper, fork-lift and pusher-fork attachments are available. Frank G. Hough Co., Libertyville, Ill.
650/Circle on Reader's Service Coupon

EXTRUDERS—Bonnot Co. reports a Special Combination Extruder installed in 1912 at Metropolitan brick of Canton has produced over one billion brick in its 45 years of operation—enough for 101,250 homes. Bonnot Co., Canton 2, Ohio.
651/Circle on Reader's Service Coupon

RIGID FRAMES—in clear spans of 32', 36', 40', 50', 60', 70' and multiples thereof, as well as pipe structures that are flexible and adaptable to your individual needs are all available. R. G. Varner Steel Products Inc., Pine Bluffs, Ark.
652/Circle on Reader's Service Coupon

SUPERLITE UNLOADERS—Claim low first cost, low operating cost, and fast, gentle handling. Builders Equipment Co., 2810 N. Central Ave., Phoenix, Ariz.
653/Circle on Reader's Service Coupon

STOKERS—by Canton reportedly reduce fueling labor costs with less manual firing effort, lower fuel bills by high-efficiency combustion of cheaper grades of coal, produce cleaner operation by eliminating 95% of the smoke nuisance, and improve kiln operation by making firing cycles more uniform and requiring less firing per cycle. Canton Stoker Corp., Canton, Ohio.
654/Circle on Reader's Service Coupon

TILE GLAZES—Recent tests show that ceramists can reduce the mill addition by as much as 25% and still retain reflectance values comparable to the opacifier they were using with Superpax A for wall tile sanitary ware glazes. Titanium Alloy Mfg. Div., Nat'l Lead Co., 111 Broadway, New York City.
655/Circle on Reader's Service Coupon

POLY-V DRIVE—A totally new concept of power transmission is claimed to deliver up to 50% more power than a conventional V-belt drive of equal width. A single-endless belt with parallel v-ribs runs on sheaves specially designed to mate precisely with belt ribs, giving uniform pull, even load drive over the full sheave width. R/M Poly-V belts have eliminated the matching problems of multiple V-belt drives. Raybestos-Manhattan, Inc., Passaic, N. J. will supply further information.
656/Circle on Reader's Service Coupon

CRAWLER — Koehring 605 has been stripping clay and shale 18 hours a day on one location. Boom lengths on this model range from 50 to 100 feet, drag buckets from 1½ to 2½ cu. yds. Koehring Co., Milwaukee 16, Wis.
657/Circle on Reader's Service Coupon

CHEMICALS—Most southern brick and clay producers can get overnight service from this supplier of sulphur chemicals. Added to their offering is T-C Hydro, a high stability and uniformity agent. Tennessee Corp., 617 Grant Bldg., Atlanta, Ga.
658/Circle on Reader's Service Coupon

CONTROLS — By Minneapolis-Honeywell reportedly have helped Merry Bros. Brick & Tile Co. produce more high quality brick at lower fuel cost in their new tunnel kiln with automatic temperature controls. Minneapolis-Honeywell Regulator Co., Wayne and Windrim Aves., Philadelphia 44, Pa.
659/Circle on Reader's Service Coupon

KILN CARS—In one plant, 150 Greenville steel kiln cars have been in continuous use for more than a year and a half without loss of production time due to kiln car breakdown. Heavy-duty, all steel cars with cast iron wheels can be pushed, fully loaded, by one man . . . cars are built to your specifications. Greenville Steel & Foundry Co., Box 1199, Greenville, S. C.
660/Circle on Reader's Service Coupon

TRACTOR-DOZER — Allis-Chalmers new HD-6 claims 65 belt HP, up to 15,500 lb. drawbar pull, forward speeds from 1.5 to 5.5 MPH and reverse speeds up to 4.1 MPH. Also has engine-mounted rams, only two linkage points. Allis-Chalmers Construction Machinery Div., Milwaukee 1, Wisc.

661/Circle on Reader's Service Coupon

CUTTERS—Platens for brick or tile are built at any level for optimum wire cutting angles. All are quick-change units that do not disturb the alignment of reel and gear assembly. Maximum brick: 27 per cut. Maximum tile: 5 12" pieces. Chambers Bros. Co., 52nd & Media Sts., Philadelphia 31, Pa.

662/Circle on Reader's Service Coupon

BRICK PRESS—In order to better orient the mix for the final compression stroke, Boyd presses now have an automatic "De-Airing Pause" in the machine's operation. This is claimed to allow trapped air to escape from the partially compressed material. Over 95% of American refractory production is said to be turned out on Boyd presses. Chisholm, Boyd, & White Co., 610 W. 57th St., Chicago 21, Ill.

663/Circle on Reader's Service Coupon

CONCRETE BLOCK—Because control is so important in selection of block aggregates to maintain uniform quality, Besser Co. makes available to Vibrapac users a special Materials and Methods Research & Testing department. Field engineers will come to your plant, gratis. Dept. M-M, Besser Co., Alpena, Mich.

664/Circle on Reader's Service Coupon

HYDRAULIC TRANSFER CARS—Claimed to be only car on market with truly variable speed. Hydraulic drive allows use of such auxiliary equipment as pusher cylinder on car to pull on and push off kiln cars, and even change dryers. Engineering Associates Inc., P.O. Box 5284, Asheville, N.C.

665/Circle on Reader's Service Coupon

EXCAVATORS — You can cut costs in stripping and loading through more output, steady operation with little maintenance trouble, and ample strength with Bucyrus-Erie's 38-B. Bucyrus-Erie Co., So. Milwaukee, Wisc.

666/Circle on Reader's Service Coupon

COAL—Baltimore & Ohio Railroad coal traffic representatives can help you discover the most efficient low-cost bituminous coal for your particular requirements. Coal Traffic Dept., B&O Railroad, Baltimore 1, Md.

667/Circle on Reader's Service Coupon

HARDFACING—Dixie Fire Brick Co., of Kimberly, Ala., recently set up the following hardfacing program with help from Stoody Co.: 60" muller tires, 3" thick with a 12" face—finished with a pass of Stoody 21; augers, shredders, sealing dies, spacing rings, and paddles of the extruding machine—with other Stoody alloys. Stoody Co., 11937 E. Slauson Ave., Whittier, Calif.

668/Circle on Reader's Service Coupon

HAMMERMILLS — Miller rotors throw particle against particle; material helps to pulverize itself. Double rotor hammermills have replaceable manganese steel hammers and tips. 50 and 100 ton capacities. Miller Equipment Co., P.O. Box 1566, Salisbury, N.C.

669/Circle on Reader's Service Coupon

CHEMICALS — Polyfon is claimed to increase dry strength 103%—0.4% Polyfon is said to increase dry modulus of rupture from 350 to 710 pounds per square inch, give greater uniformity, reduce lamination and keep product non-sticky. West Va. Pulp and Paper Co., Charleston A, S.C.

670/Circle on Reader's Service Coupon

FANS—New Type CR radial blade fan is streamlined — company claims this gives maximum static efficiency with reduced housing wear, because of minimized turbulence. Mechanical efficiency is reported to be over 78% for broad range. Buffalo Forge Co., Buffalo, N.Y.

671/Circle on Reader's Service Coupon

How to Get Rush Information

If you want further information or literature describing the products in this special features, just use the handy card you will find on page 18. Our Reader's Service Dept. will contact the manufacturers directly and see that you obtain the requested information as quickly as possible.

HARDFACING — Amsco's Super HF-20 Electrodes are claimed to have doubled service life of built-up hammers and mill housing because of high abrasion resistance, cost 40% less, and speeded up welding at Welding Flux Processing, Chicago Heights, Ill. American Manganese Steel Div., American Brake Shoe Co., Chicago Heights, Ill.

672/Circle on Reader's Service Coupon

PAYLOADER—One man on a model HA Payloader tractor-shovel, measures out 10,000 pound batches within 5-pound accuracy at Borg-Warner's Ingersoll-Humphryes Div. vitreous china plant. Four to five trips do the job, it's claimed. Frank G. Hough Co., Libertyville, Ill.

673/Circle on Reader's Service Coupon

GASKETING—Chem-O-Sol flowed in gaskets are claimed to flow quickly, eliminate dripping through proper gelling rate, fuse quickly and have good hot strength. Chem-O-Sol is a plastic formulation for the new plastic clay pipe joint. Chemical Products Corp., King Philip Rd., E. Providence, R.I.

674/Circle on Reader's Service Coupon

ENGINEERED AIR HANDLING—to correctly apply fan equipment is offered by Robinson. Get the right fan to do the right job—volume-wise, pressure-wise, construction-wise. Robinson Ventilating Co., Zelienople, Pa.

675/Circle on Reader's Service Coupon

BUILDINGS — Prefabricated pipe kiln buildings, storage buildings, and grinding buildings with steel, aluminum or asbestos covering according to your specifications are offered by Southern Fabricating Inc., Box 97, Staley, N.C.

676/Circle on Reader's Service Coupon

SCREENS—Modern and efficient electric heating equipment. Facts on Universal screens and Unilec heating are available in Catalog No. 150. Universal Vibrating Screen Co., Racine, Wisc.

677/Circle on Reader's Service Coupon

ROCKFACER—Claimed to pay for itself in 90 days, Rockfacer chips a straight edge on your brick, eliminating hammer-and-chisel methods. Machine is said to average 1250 brick per hour. Send a sample of your brick and have it Rockfaced. Rockfacer Co., 503 Hickory Tree Rd., P.O. Box 547, Mesquite, Tex.

678/Circle on Reader's Service Coupon

VIBRATORY FEEDERS—Control your feed rates, matching the efficiency of screens, driers, shredders, mullers and pug mills. Get smooth, even material flow. Electromagnetic principle confines all movement to leaf spring. Syntron Co., 620 Lexington Ave., Homer City, Pa.

679/Circle on Reader's Service Coupon

MOTORS—One to 600 H.P., A.C. Fast delivery of all popular models from the company's warehouses is claimed by Brook Motor Corp., who have been in the motor business for over 50 years. Brook Motor Corp., 3553 W. Peterson Ave., Chicago 45, Ill.

680/Circle on Reader's Service Coupon

CONSTRUCTION NEWS — Advance information about new projects helps you know what's being built, who to contact, when the job is out for bids, and who's bidding. Pick the type of job you want. Dodge Reports, Dept. 45, 119 W. 40th St., N.Y.C. 18.

681/Circle on Reader's Service Coupon

BRICK FORKS — Priester forks are handling brick in units of all sizes, emphasizing automatic operation. For cored and solid brick, forks come with flap grippers. Bradney Machine Co. Inc., Middletown, N.Y.

682/Circle on Reader's Service Coupon

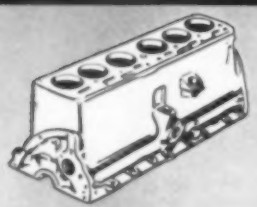
KILN CAR WHEELS — Henderson Clay Products of Henderson, Tex., reports praise for Sanford-Day wheels and bearings. S-D's "Floater" wheel is claimed to remain in perfect alignment, needing no adjustment once bearing nut is tight. Enclosed outer hubs and protected inner hubs reportedly eliminate dust, retain lubricant. Sanford-Day, Knoxville, Tenn.

683/Circle on Reader's Service Coupon

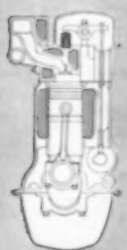
A BIG difference in lift trucks is the Engine

Allis-Chalmers lift trucks are powered by Allis-Chalmers engines with world-wide reputation . . .

for reliability



There's plenty of strength in an Allis-Chalmers engine—from heavy-duty block to rugged crankshaft and connecting rods.



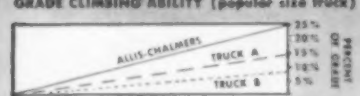
Cooling is more complete; temperatures more evenly maintained due to valve-in-head design.

for easy maintenance

No reboring necessary, no need for oversize rings, with wet sleeve cylinder liners that are easily replaced.

Allis-Chalmers makes all three engines—diesel, gasoline and LP gas.

for performance



There's high torque at normal engine speeds with Allis-Chalmers engines—extra grade-climbing ability, extra usable horsepower.

Greater efficiency, increased power, easier servicing results from the use of overhead valves.

Engine is fully accessible and so simple to repair that it can be completely overhauled without removal from truck.

Simplified design of engine means no complicated or unfamiliar parts to contend with.

This is the inside story of the heavy-duty engines made *by* Allis-Chalmers specifically *for* Allis-Chalmers fork lift trucks.

The fact that they are the most rugged used in lift trucks means thousands of extra work hours. The fact that they deliver more *usable* horsepower means they do extra work every hour.

Send for literature telling you more about this power that makes the big difference in lift trucks, or see your Allis-Chalmers material handling dealer.

BH-51

ALLIS-CHALMERS, MATERIAL HANDLING DEPT., BUDA DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

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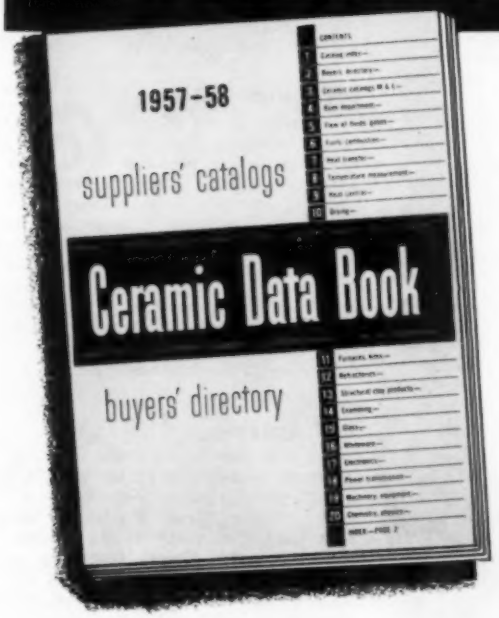
THE NEW 1957-58
Ceramic Data Book



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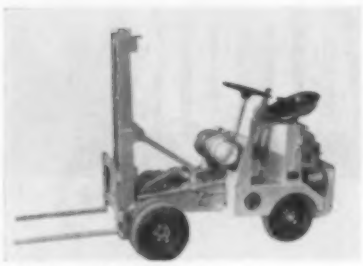


LP For Moto-Bugs

Latest innovation on the Kwik-Mix Moto-Bug units is LP gas equipment. Lower price of the gas, plus reduced losses due to spillage and evaporation are reported to mean added economy of operation. Other savings are said to come from longer engine life and lower maintenance cost when the LP is used. LP power unit is available on both the S-10 and R-15 Moto-Bug models. Complete information on the LP power and on the models of Moto-Bugs is available from Kwik-Mix Co., Port Washington, Wis., Div. of Koehring Co.

684/Circle on Reader's Service Coupon

Signaling Controller

Information about the L&N Thermocouple Electromax signalling controller for two-position control has been printed in data sheet form. The instrument is designed to provide low-cost electronic control for many processes where a record or continuous indications is not required. Uses can

include zone control on continuous kilns, and excess temperature cut-out control. Write for data sheet ND47-33 (1) to Leeds & Northrup Co., Philadelphia, 44, Pa.

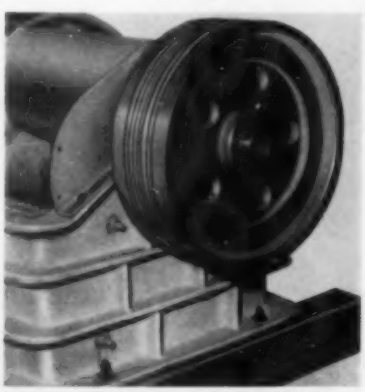
685/Circle on Reader's Service Coupon

Tournapull Torque

Buyers of LeTourneau-Westinghouse "B" Tournapulls now have a choice of transmissions—torque converter or conventional manual shift. Both are available on current production machines. The new torque converter version can be had with any of the standard "B" interchangeable trailing tools, including scraper, rear dump or crane. Standard equipment

for the TC equipped models is a bigger 335 hp Turbocharged diesel engine. Features of the torque conversion unit include downgrade retarder and converter lock-up. LeTourneau-Westinghouse Co., Peoria, Ill.

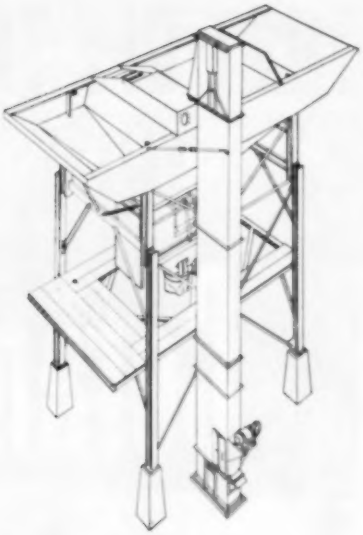
686/Circle on Reader's Service Coupon



Anti-Fraction Jaw Crusher

Denver has announced beginning of production of the new all anti-friction bearing type H jaw crusher in sizes up to 10 x 20", with all crushers having cast steel frames. The anti-friction bearings are said to provide cooler runs and longer bearing life. Pressure grease lubrication and labyrinth dust seals are part of the unit; jaw and cheek plates are manganese steel, with jaw plates reversible for longer wear. Denver Equipment Co., Denver, Colo.

687/Circle on Reader's Service Coupon



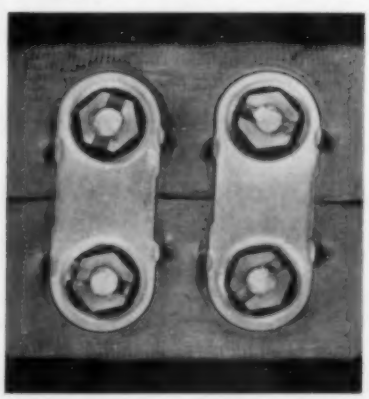
Econoplant Batching

Designed as an economical and accurate batching plant, the Econoplant batching set-up provides three compartments of 45 cu. yds. total heaped capacity and one 70 bbl. compartment. The outfit has large top openings to make clamshell charging practicable; all-welded fabrication of the bin structure is said to help simplify erection and to provide a maximum lift of about 5 tons. C. S. Johnson Co., Champaign, Ill.

688/Circle on Reader's Service Coupon

Belt Splicing

It's now possible to cover or protect conveyor belt splices by using REMA, a self-vulcanizing rubber repair material, where Flexco Fasteners have been used. Two methods are possible: in one, briefly, Flexco fasteners are recessed in the belt and covered with REMA; in the other, both belt ends are sealed with REMA Red Filler

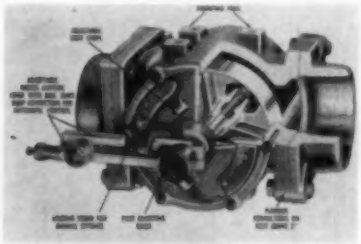


Sheeting before applying the fasteners. Belts can be put in operation as soon as the joint is made and the REMA applied. Full information can be had from Flexible Steel Lacing Co., Chicago 44.

689/Circle on Reader's Service Coupon

Adjustable Port Valve

A new valve has been developed by Hauck which is said to provide accurate control with low operating torque of air or gas flow at pressures up to



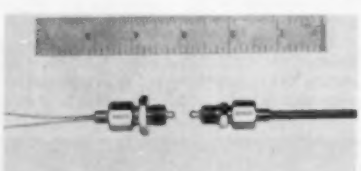
25 psig and temperatures up to 400 F. Designed to hold settings in automatic or manual control systems, the valve provides flow rate over the full control range by 90° rotation of its lever. The lever rotates a cylinder piston for the desired amount of port opening. Many other features will be described for you by Hauck Mfg. Co., Brooklyn, N. Y.

690/Circle on Reader's Service Coupon

Narrow Aisle Hopper

A new self-dumping hopper, only 30" wide, designed for bulk handling through narrow aisles and confined space is now being made by Roura. The capacity is ten cu. ft.; mounted on casters, unit can be pushed manually or transported by fork truck. Self-dumping action is triggered by the operator releasing a locking handle. Full story available from Roura Iron Works, Detroit, Mich.

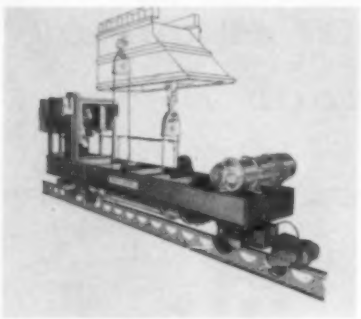
691/Circle on Reader's Service Coupon



Midget Thermocouple Gland

New Conax midget thermocouple glands, less than 1½" long by ½", provide a positive seal for bare wire thermocouples from .005 microns to 5,000 psi, the manufacturer states. Small, compact design makes these excellent for applications where space is at a premium. Temperatures can be accurately checked up to 185°F at a time constant of less than one second; units are available with standard ⅛" taper pipe thread or standard aircraft thread. For information on these, and other Conax midget thermocouple glands, write Conax Corp., Buffalo 25, New York.

692/Circle on Reader's Service Coupon



Tramrail With Dump Hoist

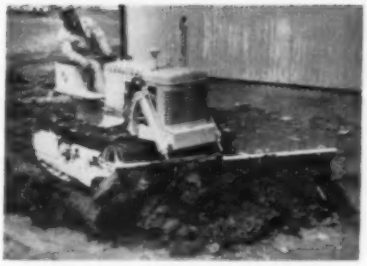
A cab-controlled twin-hook hoist carrier provided with an auxiliary hoist for dumping has been built by Cleveland Tramrail. Of weather-proof construction for outdoor service, the unit will pick up material, haul it, and empty by tipping. Hoist speed is 35 fpm; travel speed 250 fpm. Capacity is 12,000 lbs. Other carriers of different capacities are available. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickcliffe, Ohio.

693/Circle on Reader's Service Coupon

New Electric Vibrator

A redesign job has been done on the RC-50 electric vibrator made by Cleveland. Design change was intended to provide a more powerful unit, easier to handle and install. The new unit develops a maximum vibrating impact of 2250 lbs., compared to the older model's 1440 lbs. The RC-501 as redesigned, is 15 lbs. lighter; length overall has been reduced from 14¾" to 13⅛"; mounting base changed for easier installation. Other improvements will be described for you by Cleveland Vibrator Co., Cleveland, Ohio.

694/Circle on Reader's Service Coupon



Improved TerraTrac Steering

An improved type of controlled differential steering for all TerraTrac crawler tractor models with standard-shift transmissions has been announced by Case. The new system is reported to give greater maneuverability and easier hauling, yet to retain power and traction on both tracks while turning. The improved differential steering is standard now on current production models 320, 400 and 500 crawlers. J. I. Case Co., Racine, Wis.

695/Circle on Reader's Service Coupon

Dynamaster Recorder

A new Electronic Dynamaster X-Y recorder has been introduced by Bristol. The new strip-chart recorder will automatically plot a continuous curve showing the relationship of one measured variable to another.

Some uses mentioned by Bristol include plotting temperature versus pressure, speed versus torque, and other variables. The Dynamaster records on a 12-inch strip chart. Bristol Co., Waterbury 20, Conn.

696/Circle on Reader's Service Coupon

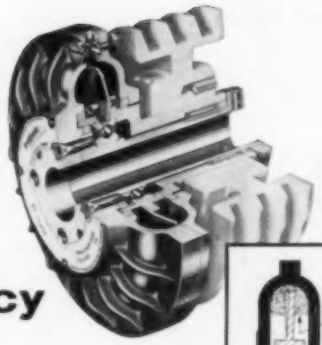
Magnetic Hand Sweeper

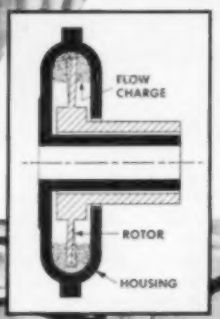
A redesigned model of the Homer permanent magnet hand sweeper has been introduced by Homer. The new design is claimed to provide easier moving, greater maneuverability, and

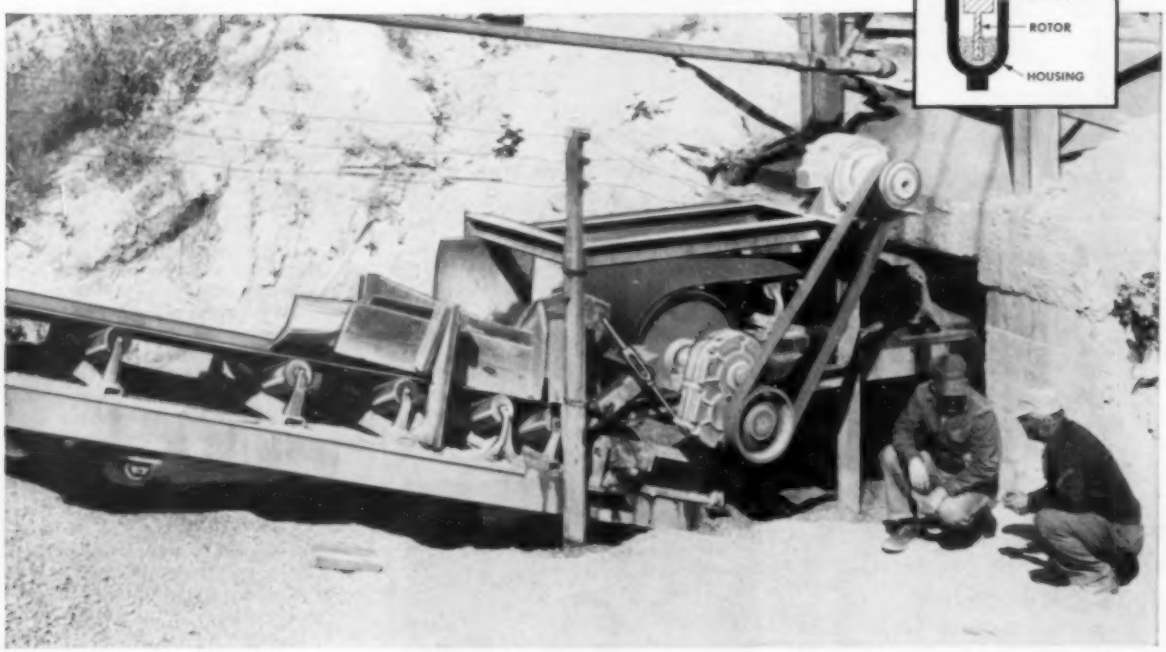
simplified cleaning of the tramp metal. Available in sweeping widths of from 12 to 36", the unit has cast main housing; lightweight handle; plastic handle grips; semi-pneumatic tires. Homer Mfg. Co., Lima, Ohio.

697/Circle on Reader's Service Coupon

This new drive starts loads smoothly... with smaller motors ...and gives 100% efficiency at full load!







FLEXIDYNE

THE DRY FLUID DRIVE

This tunnel conveyor, 225 feet long, handles 500 tons of sand and gravel per hour—8 to 16 hours a day.

With Flexidyne, the motor picks up the load easily and smoothly. Power investment is reduced, power costs cut, maintenance simplified and conveyor belts are protected against breakage.

Flexidyne, the Dry Fluid Drive, is the *new* development that starts loads smoothly, that protects against shocks and overloads, that saves power and that gives 100% efficiency at full load!

The "dry fluid" in Flexidyne is heat treated steel shot. A measured amount, called the flow charge, is contained in the housing, which is keyed to the motor shaft. When the motor is started, centrifugal force throws the flow charge to the perimeter of the housing, wedging it between the housing and the rotor which transmits power to the load.

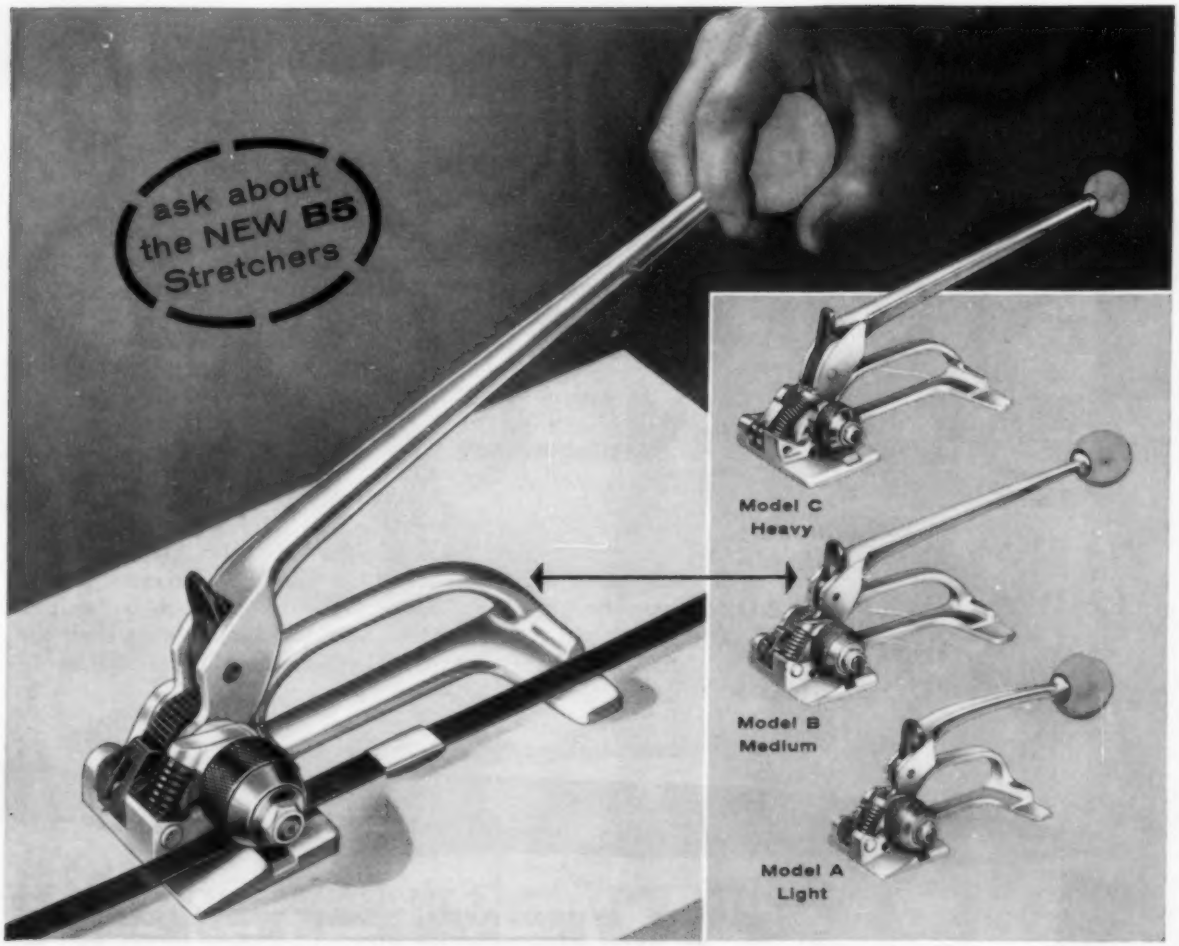
After a momentary slip between housing and rotor, the two become locked together and achieve full load speed without slip and at 100% efficiency during the running cycle. Changes in weather—hot or cold—inside or out—do not affect operation of Flexidyne.

Flexidyne is now available in 8 sizes—for use with electric motors and internal combustion engines from 1 hp to 300 hp. While each size is power rated, the flow charge can be varied at will to give tailor-made torque for your particular job. Write for Bulletin A-640.

DODGE MANUFACTURING CORPORATION
4900 Union Street, Mishawaka, Indiana

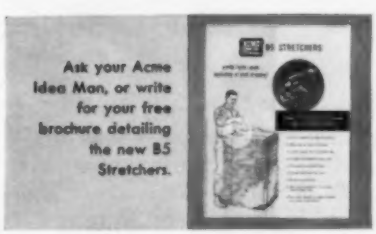
CALL THE TRANSMISSIONEER, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in in your classified phone book, or write us.

DODGE
of Mishawaka, Ind.



Ask your AIM* about the brand new B5 stretchers

Acme Idea tensioning tools for steel strapping



ACME STEEL COMPANY now offers the new B5 Stretchers . . . the most versatile Idea strapping tools available to industry.

The B5 Stretchers are rugged but without excess weight and properly balanced. They can be used left or right handed, with the strapping dispenser either ahead or behind the operator for standard or reverse loop applications.

The design of the new B5 Stretchers permits fast, easy entry and alignment of the strap loop ready for tensioning. And the B5 Stretchers can be used to apply strapping in any direction, with the same ease of operation.

The arrangement of the rotary gripping dog permits continuous, unlimited take-up, quick release after strapping is tensioned. B5 handles can be positioned quickly for maximum leverage in confined areas.

B5 Stretchers come in three sizes—Model A for light, Model B for Medium and Model C for heavy applications.

***Ask your Acme Idea Man** about the new B5 Stretchers today. Contact him at the nearest Acme Steel office, or write: Dept. BES-107. Acme Steel Products Division, Acme Steel Company, Chicago 27, Illinois.

In Canada, Acme Steel Company of Canada, Ltd., 743 Warden Avenue, Toronto 13, Ontario.

ACME STEEL **STEEL STRAPPING**

for uniform burning and long service life in

UNDERFIRED TUNNEL KILNS

Some Leading H-W Brands:

KAOSIL
H-W SAVAGE
WOODLAND X

Harbison-Walker Spanner Tile help achieve the fullest advantage of underfiring. The dependable service they render in kilns used for firing face and common brick and sewer pipe at temperatures up to 2200°F. is attributable to certain enhanced physical properties. Most important among these are high transverse strength and excellent spalling resistance.

and OVERFIRED TUNNEL KILNS

H-W Brands include

Super-Duty and High Duty Fireclay Refractories

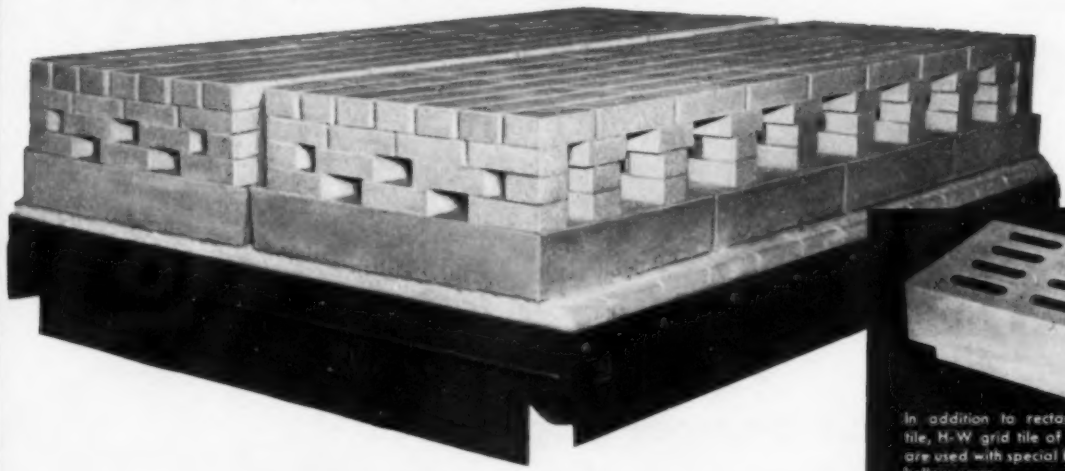
especially suited for car top service

H-W CAR TOPS of high duty fireclay quality possess the properties needed for longest service in pottery, brick and other ceramic tunnel kilns. They have good strength, high resistance to thermal shock for fast cycle kilns and excellent stability under load at high temperatures.

The many different requirements for widely diversified tunnel kiln operations are fulfilled by Harbison-Walker CAR TOPS of designs especially suited for particular conditions. They are made in various kinds of refractories, such as high duty and super-duty fire clay, high-alumina and silica.

World's Most Complete Refractories Service

Harbison-Walker Spanner Tile



In addition to rectangular spanner tile, H-W grid tile of various designs are used with special benefit for firing hollow ware.

Harbison-Walker Car Top Brick

- **TRIED AND PROVED** for long service life
- **EXCELLENT WORKMANSHIP** and accurately controlled quality
- **VARIOUS DESIGNS** for every requirement
- **MADE IN DIFFERENT TYPES AND CLASSES OF REFRACTORIES** for all operating temperatures

HARBISON-WALKER REFRACTORIES COMPANY

AND SUBSIDIARIES

GENERAL OFFICES.....PITTSBURGH 22, PENNSYLVANIA

USE

NEW B-200

Lakefield

Nepheline Syenite

for sewer pipe and structural clay products–

a small amount of B-200 added to your mix gives LOWER ABSORPTION, HIGHER STRENGTH

Research Data and Samples Available Upon Request

Great Lakes Foundry Sand Co.

720 United Artist Bldg. · Detroit

HIGH ALUMINA CONTENT · IDEAL FLUXING PROPERTIES

This is the 140th of a series of ads featuring leaders in the Concrete Products Industry who are stepping up block production with Besser Vibrapac machines.

Another LEADER in the Block Industry!

Aerial view of the new Raleigh plant from the block plant side. Entire plant comprises 9 acres.

H. M. Shaw General Manager of both the Charlotte and Raleigh plants.

Besser Vibrapac in operation at the Raleigh plant. Produces up to 10,000 8" x 8" x 16" units (8" or equivalent) per day.

Superior Block Company Develops Block Manufacturing into a BIG BUSINESS

In every section of the country, block plants are rapidly becoming a major factor in the construction industry. This is particularly true in North Carolina where the Superior Block Company recently completed another expansion program.

Superior Block began the manufacture of concrete masonry units in Charlotte, N. C. seventeen years ago. Five years later they installed their first Besser Vibrapac. Since then, three more Vibrapacs were added, including one for the company's new Raleigh plant. The last two machines were installed under the Vibrapac Agreement — the modern method of securing high production block making equipment.

H. M. Shaw, General Manager of Superior Block, stated he wanted *"higher production machines producing quality units"*. The Vibrapac block machines fulfilled his requirements. And they can do the same for you. Write, today, for literature.

BESSER Company

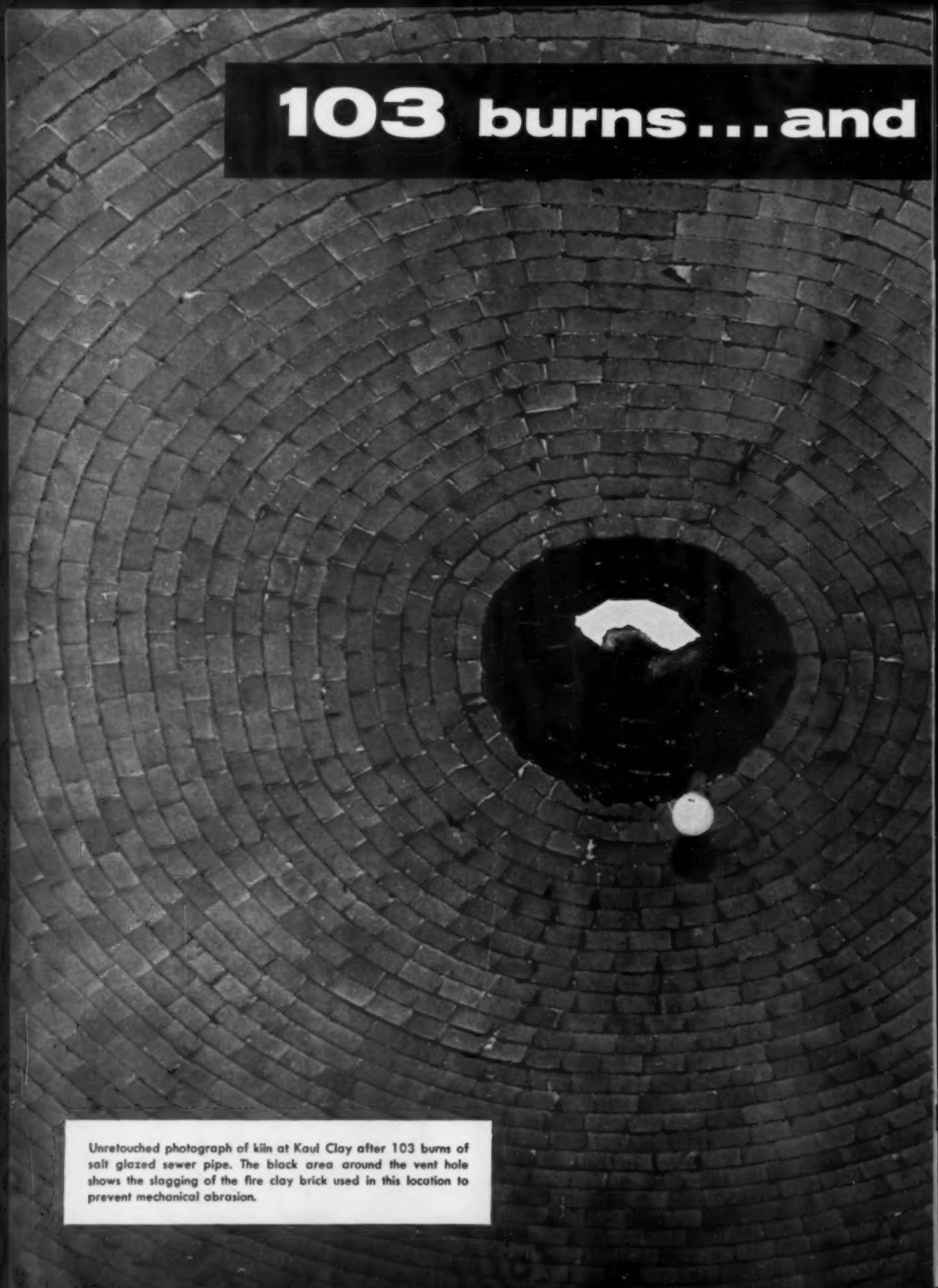
DEPT. 139, ALPENA, MICH. U. S. A.

First in Concrete Block Machines

• One of the finer homes in Charlotte, N. C. Vibrapac block from Superior Block Company were used throughout.

A7-134

103 burns...and



Unretouched photograph of kiln at Kaul Clay after 103 burns of salt glazed sewer pipe. The black area around the vent hole shows the slagging of the fire clay brick used in this location to prevent mechanical abrasion.

no salt glaze reaction

B & W Insulating Firebrick increase production 11%, cut cycle time 28% at Kaul Clay Manufacturing Co.

This photograph of #17 kiln crown at the Kaul Clay Manufacturing Company, Toronto, Ohio, is clear evidence of the performance of B&W Insulating Firebrick in salt glaze periodic kiln service.

Kaul Clay's production figures prove it, too. Over a recent six months' period, plant records indicate an *11% increase* in output. They obtained 2.74 burns per month from kilns lined with B&W Insulating Firebrick as against 2.47 burns per month from kilns constructed of firebrick. Cycle time on 4" glazed pipe—setting, burning and drawing—has been reduced from 7 to 5 days. Fuel costs have also been cut substantially. During this time, approximately 40% of Kaul Clay's kilns were converted to IFB construction.

This profitable performance is due to *two* properties of *lightweight* B&W IFB: (1) They store and conduct less heat. Their low heat storage permits quicker heating and cooling of furnaces, thus helping step up production and cut cycle time. It means, too, that less fuel is required to bring them up to temperature. (2) B&W IFB have excellent resistance to the atmosphere of salt glazing kilns. That's because the chemical properties of B&W IFB enable them to withstand alkali attack.

Why don't you begin profiting from the advantages of lightweight B&W Insulating Firebrick in periodic kiln service? Consult your local B&W refractories engineer on your specific application. He may be able to point the way to new savings for you.

Bulletin R-43 gives helpful data on the use of B & W Insulating Firebrick in periodic kilns. Send for your copy today.

BABCOCK & WILCOX

THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N.Y.
WORKS: AUGUSTA, GA.

B & W REFRACTORIES PRODUCTS: B & W Allmul Firebrick • B & W 80 Firebrick • B & W Junior Firebrick • B & W Insulating Firebrick • B & W Refractory Castables, Plastics and Mortars • B & W Silicon Carbide

R-878

Exclusive with Stran-Steel Buildings—

STRAN-SATIN METAL WALL

For new beauty in all-steel construction

There's no question about the versatility of Stran-Steel buildings for manufacturing, for warehousing, or as a service center. The unobstructed interior space of this new building line makes it a natural for the most efficient arrangement of equipment, machinery or vehicles.

Now rugged Stran-Steel buildings are clad with a look of luxury. With new *Stran-Satin* metal wall you get an attractive rib design and a soft pleasing luster. A wall that is strong and durable, assembled with panels that are longer, wider and easier to erect. In combination with other materials—brick, stone, wood, glass or Stranlite plastic panels—*Stran-Satin* metal wall gives you limitless variation of exterior decor. Now you can have all the features of low-cost all-steel construction, plus the eye appeal of more expensive materials.

America's newest and finest steel buildings can be site-styled, to your requirements, too. They are available in clear-span widths of 32, 40, 50, 60, 70 and 80 ft. and multiples thereof.

Up to $25,000 is available to finance these buildings for your business through the Stran-Steel Purchase Plan. As little as 25% initial investment, up to 5 years to pay. Ask your Stran-Steel dealer for the complete story.

Dept. 25-6

STRAN-STEEL CORPORATION

Detroit 29, Michigan • A Unit of

NATIONAL STEEL CORPORATION

Here's where you can get more information:

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Chicago 6, Ill., 205 W. Wacker Dr., Financial 6-4950
Cleveland 16, Ohio, 20950 Center Ridge Rd., EDison 1-3834
Detroit 29, Mich., Tecumseh Rd., Vinewood 3-8000
Houston 5, Texas, 2444 Times Blvd., JAckson 6-1628
Kansas City, Mo., 6 East 11th St., BAltimore 1-8892
Minneapolis 4, Minn., 708 S. 10th St., FEderal 9-8875
New York 17, New York, 405 Lexington Ave., Murray Hill 6-1400
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Stran-Steel Corporation, Detroit 29, Michigan, Dept. 25-6

☐ Please send me the Industrial Buildings Catalog.

☐ Please have your representative contact me.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

LOADS 2 CU. YDS. PER PASS

quicker...easier...
at less cost per yd.

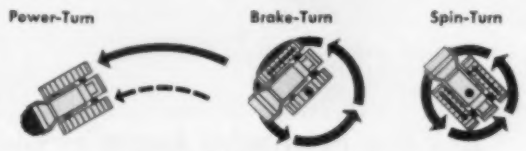
For big yardage production, no other crawler in its class can match the combination of power, speed and maneuverability you get with the new *2 cu. yd.* Case® TerraTrac® Model 1000 tractor-shovel. It not only gets bigger loads faster . . . it also turns and maneuvers faster with a new *COUNTER-ROTATING* Terramatic transmission that drives one track *forward* and the other track *reverse* at the same time.

Exclusive "Knock-out" dumping action cleans bucket instantly of stickiest material, while extra-high (9'6") clearance lets you back away from big trucks or hoppers without stopping to raise bucket. You also get *exclusive torsion-bar track suspension, automatic track roller lubrication,* PLUS many other advanced features that will increase your production, cut your costs.

See this revolutionary higher-speed 2 cu. yd. rig now at your Case Industrial Dealer's, or mail coupon for catalog and free eye-opening demonstration.

100 HP Diesel plus torque-converter drive

Develops up to 24,000 lbs. of "crowding-power" for digging hard materials. Converter automatically balances tractor speed to changing loads . . . eliminates clutching and gear-shift guesswork . . . keeps engine and hydraulic pump operating with maximum power at all times.



Instant power-shift with 3-way power-steer

Enables you to change speeds or directions "on-the-go", without stopping to shift gears. Easy-working hydraulic controls let you turn and maneuver full loads easier — with power and traction on both tracks.

CASE INDUSTRIAL

1st in quality for over 100 years

Clip . . . mail for free catalog

J. I. CASE CO., Dept. K 1367 Racine, Wis., U.S.A.

☐ Send catalog on new 2 cu. yd. tractor-shovel

☐ I'd like a free demonstration on my job

Name ..... Position .....

Company .....

Address .....

City ..... State .....

CT-L-56

Industrial Wheel and Crawler Tractors • Loaders • Dozers • Backhoes • Engines

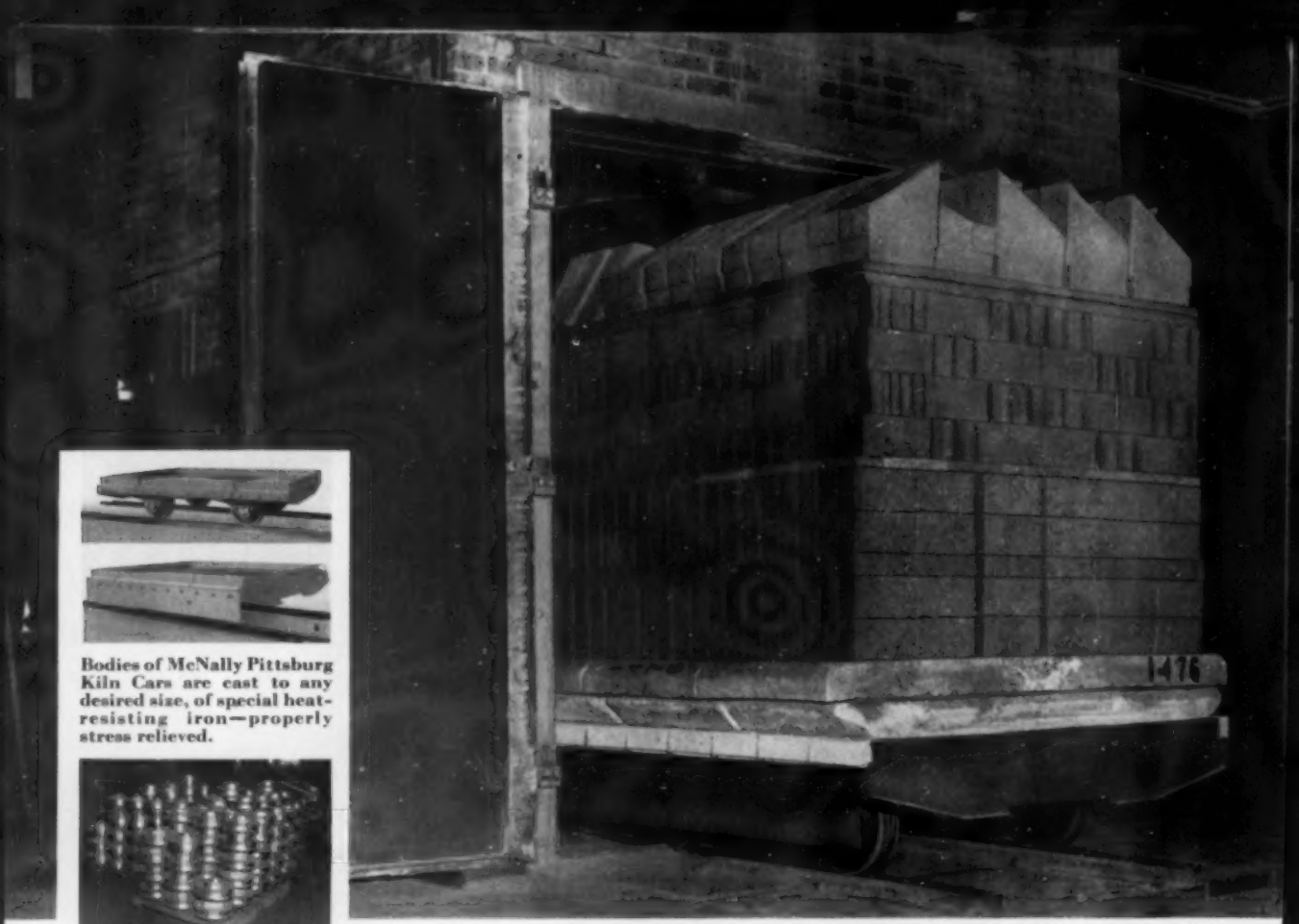


Photo Courtesy A. P. Green Fire Brick Co.

Bodies of McNally Pittsburg Kiln Cars are cast to any desired size, of special heat-resisting iron—properly stress relieved.

MacAlloy wheels, double-flanged one side, straight-faced other side—keep cars on track.

No lubricant needed on these cold-rolled steel axles—easily cleaned by compressed air.

What makes these Kiln Cars Stay in Service So Much Longer?

Here's where years of experience in designing and building equipment for the basic industries can HELP YOU CUT COSTS. Here are kiln cars engineered of special heat-resistant iron normalized by proper stress relieving—for longer life—fewer costly work stoppages.

Built to your specifications, McNally Pittsburg Kiln Cars feature exclusive MacAlloy iron—stress relieved—special bearings protected for long service. Investigate these engineered kiln cars. Mail coupon.

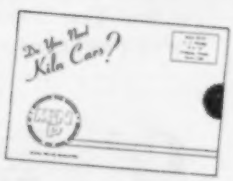
"Ask the men who know"—McNally Pittsburg Manufacturing Corp.

Other McNally Equipment

- Bevel crown gears
- Bevel crown gear pinions
- Muller wheels
- Muller tires
- Muller track plates
- Muller shafts
- Manual clutches
- Plow holders
- Swivel plates for plows
- Screen arms
- Screen plates (round and slotted holes)
- Screen plows
- All types of sleeves and bushings for dry pans
- Kilns
- Damper rings
- Damper ring covers
- Pug Mills
- Pug Mill shells
- Pug Mill shafts
- Pug Mill knives
- Pug Mill dies
- Drain tile dies
- Bushings for tile presses
- Brick machine dies
- Feeders
- Brick transfer car wheels and axles
- Conveyors, belt, scraper, apron
- Pinions, gears, sprockets, shafts, axles, and other parts to your specifications

GET THIS FREE BROCHURE AND SPECIAL INFORMATION

McNally Pittsburg Mfg. Corp., Dept. B
Pittsburg, Kansas



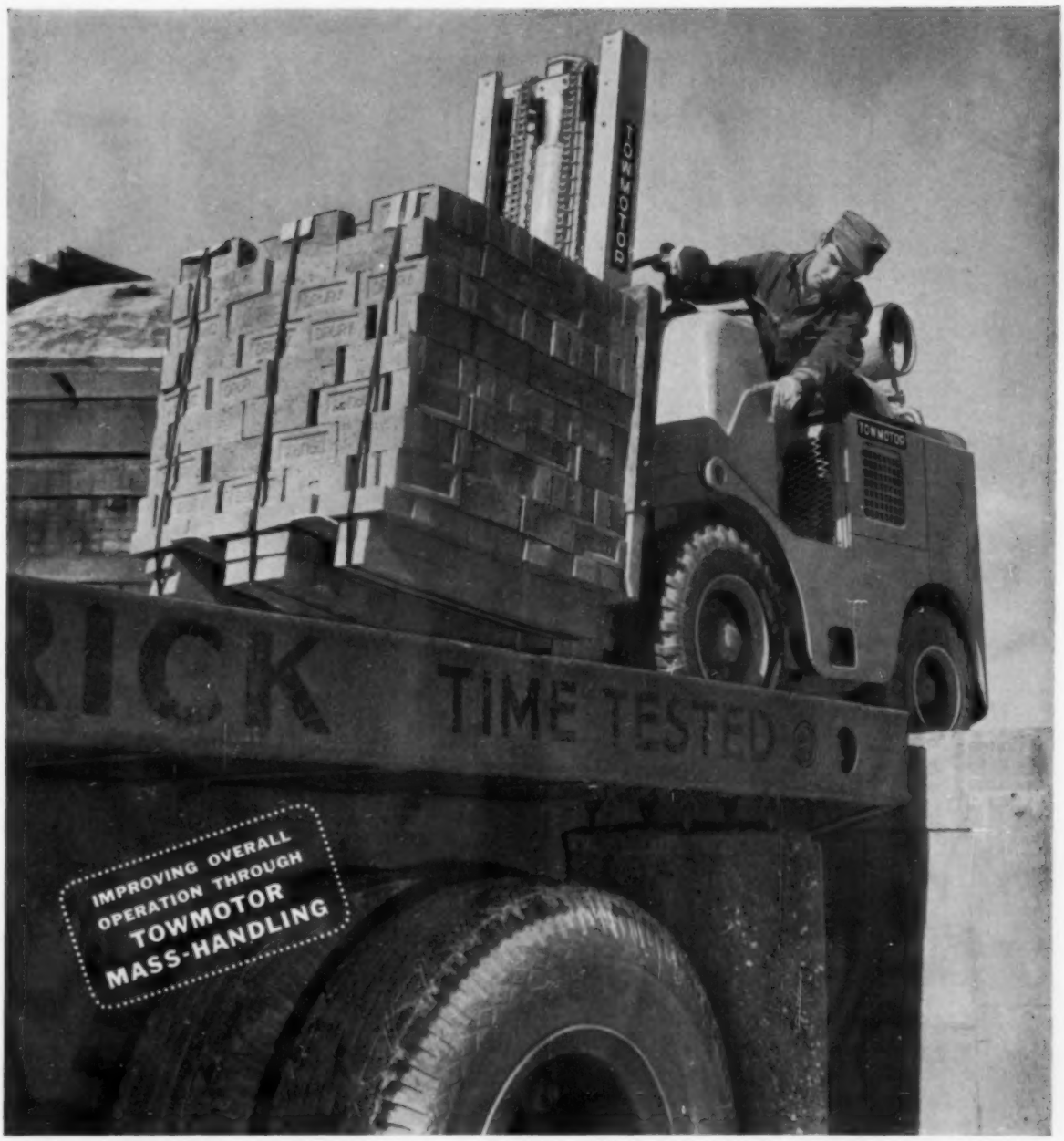
Please send information and illustrated folder on McNally Pittsburg Kiln Cars.

☐ Information on other listed items:_____

Name_____ Title_____

Company_____

City and State_____



...new yardstick for measuring profits!

Towmotor Mass-Handling—moving more units faster, at lower cost—can well be the investment that promises greatest improvement in your future profits, as you face continually rising costs and a shrinking manpower pool.

Integrating Towmotor lift trucks in your departmental operations lets you *supplement* your personnel without adding to your payroll. Enables your men to do a bigger day's work *easier*. Sends them home *fresher*. Permits each one to handle jobs you'd pay a *crew* to do!

Have you seen the new Towmotor lift trucks lately? They offer a wealth of "first-time" features such as:

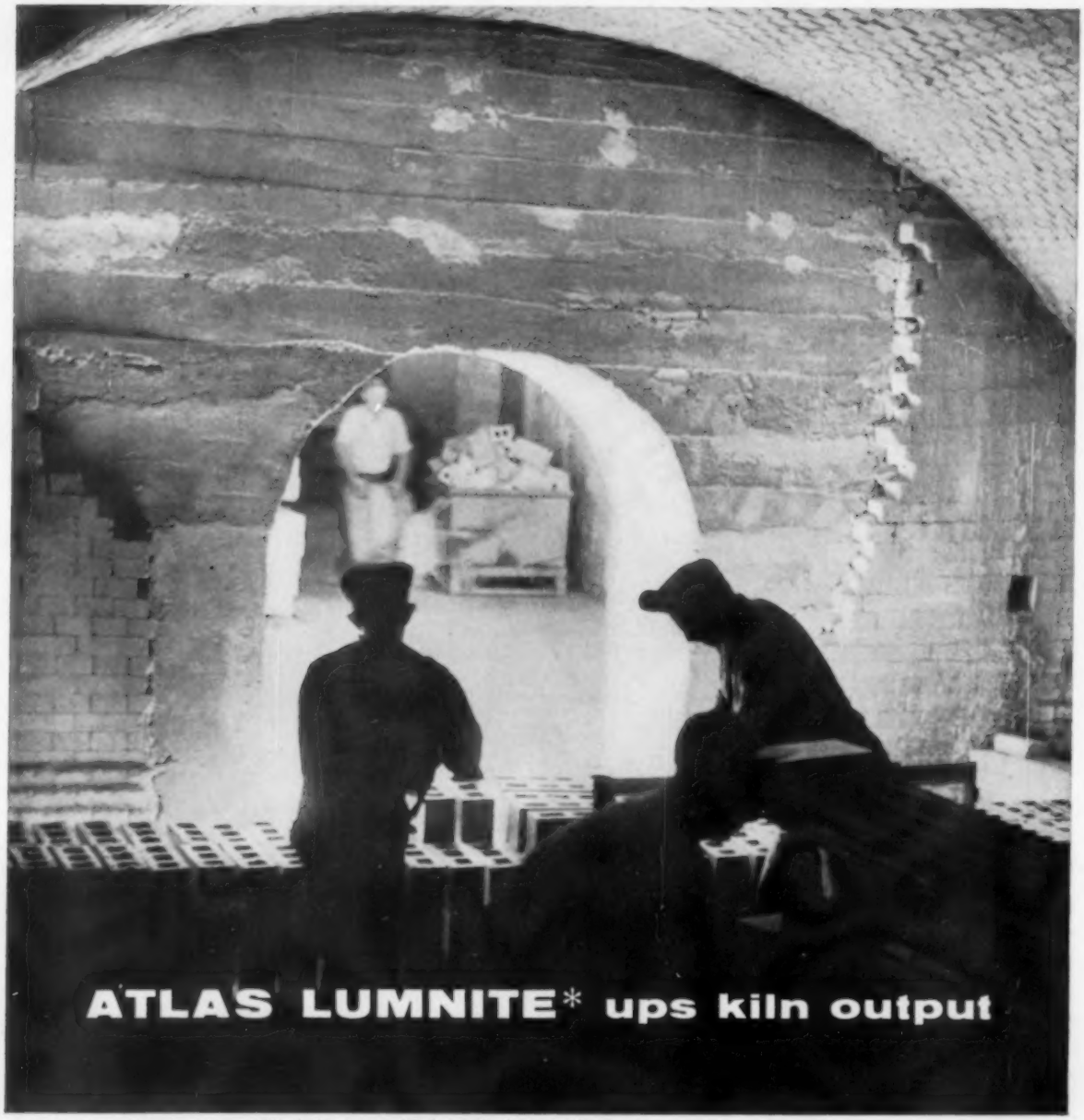
- Fatigue-free adjustable seating
- Motion-saving "centralized control"
- Maximum free lift that tops all
- No-loss hydraulic lifting action
- Power steering that saves 80% of operator's efforts

Get Bulletin SP-23 on new Towmotor lift trucks from Towmotor Corporation, Cleveland 10, Ohio.

Leaders for 38 years in building Fork Lift Trucks, Tractors and Carriers

TOWMOTOR — THE ONE-MAN GANG — **GERLINGER**

Gerlinger Carrier Company, Dallas, Oregon, is a subsidiary of Towmotor Corporation, Cleveland 10, Ohio



REFRACTORY CONCRETE arches and jambs for doors and fireboxes give longer service, and save time on installation and maintenance at West Virginia Brick Company, Charleston, W. Va. Lumnite has long been used successfully for a variety of jobs at this plant.

- . . . because placement is fast and easy—by pouring, troweling or guniting—and service strength is reached within 24 hours—resulting in less downtime for maintenance.
- Lumnite-made refractory concrete has greater resistance to thermal shock and severe service conditions.
- Smooth, jointless refractory concrete installations minimize heat loss, require little or no maintenance.

For maximum convenience, use Lumnite-made castables. These are pre-mixed, ready for use, and are made and distributed by leading manufacturers of refractories. For more information, write: Universal Atlas, 100 Park Avenue, New York 17, N. Y.

* **"LUMNITE"** is the registered trademark of the calcium-aluminate cement manufactured by Universal Atlas Cement Company.

L-147

UNIVERSAL ATLAS CEMENTS

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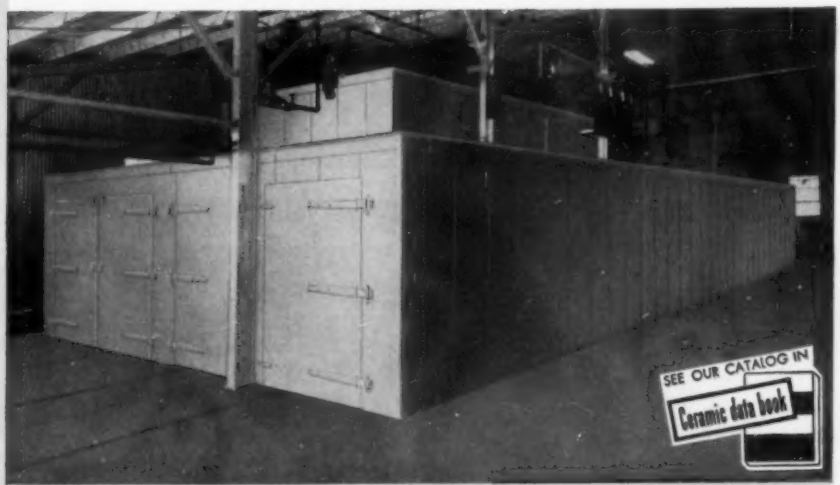
UNIVERSAL ATLAS CEMENT COMPANY—member of the industrial family that serves the nation—**UNITED STATES STEEL**

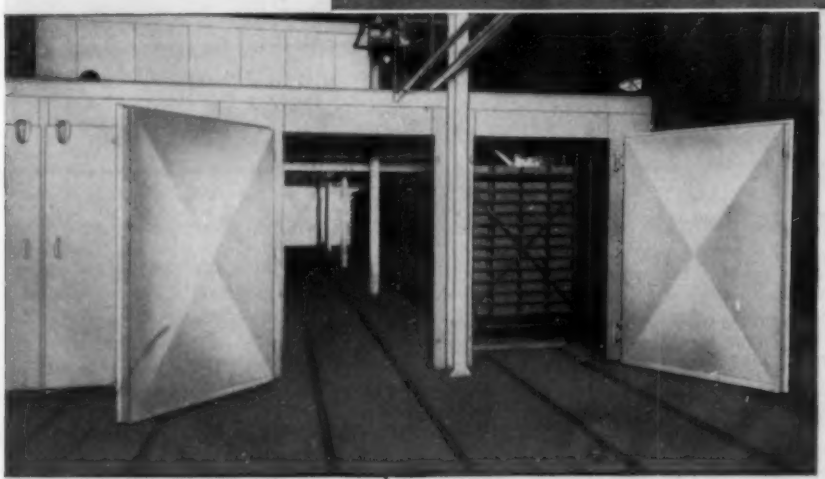
OFFICES: *Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco*

LANLY

Car Type Humidity Controlled Fire Brick Dryer at

NORTH AMERICAN REFRACTORIES COMPANY





Efficient, economical operation of heavy clay products dryers with assured uniform, quality control in production is effected with LANLY ceramic oven and dryer installations.

LANLY is ready and qualified to analyze your present operational set-up.

We'll gladly show you what we have done and are doing. Why not drop us a line?

a Few of the Manufacturers Producing Ceramic Products in Lanly Dryers

American Rad. & Std. Sanitary Corp.
American Vitrified Products Co.
Babcock & Wilcox Co.
Corundite Refractories, Inc.
Eljer Div., The Murray Corp. of Amer.
Evans Pipe Co., The
Gladding, McBean & Co.
Massillon Refractories Co., The
Mosaic Tile Co.
New Castle Refractories, Inc.
Robinson Clay Products Co.
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THE lanly CO.

CERAMIC OVENS & DRYERS
765 Prospect Ave. • Cleveland, Ohio

Write for a better way to bag new business

If you're gunning for more business from new construction, Dodge Reports can help improve your aim. They point out your *live* prospects . . . put an end to the hit-or-miss method of finding business. If you would like to see how Dodge Reports can build your business . . . help your profits mount, just read this coupon, and mail it today!

TO: **DODGE REPORTS**, DEPT. 48, 119 WEST 40th STREET, NEW YORK 18, N. Y.

Yes! I'd like to see how to get more business by knowing in advance who's going to build, what, when, where.

I want to know whom to contact and when to submit bids.

I'd like to see some Dodge Reports, and I'd like a copy of your booklet that tells how to use this accurate, daily, up-to-the-minute construction news service.

I understand that I can pick just the area in the 37 Eastern States and the type of construction activity that interests me. Also, that I won't have to wade through mounds of data to find the information I need.

I'm interested in General Building ☐ **House Construction** ☐ **Engineering (Heavy Construction)** ☐

in the Following Area: _____

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Dodge Reports
For Timed Selling to the Construction Industry

Shovel clean-up is only one of many jobs Tournatractor handles at Festus, Mo. for Aubuchon Silica Mining Division of Portage-Manley Sand Co. Working in extremely abrasive sand, and across uneven hard rock floors, has been no problem and maintenance costs have been very low.

How Aubuchon keeps ahead of tight production schedules

despite sand "sharp as grinding compound"

Pit shovel, to wash plant, to rail car — in an hour. That's a normal scheduling at Aubuchon Silica Mining Division, Festus, Mo. Owned by Portage-Manley Sand & Gravel Co., Rockton, Ill., the firm ships many carloads a week of fine silica used in foundry cores and crystal glass.

Aubuchon does no stockpiling, depends on steady production to fill orders. Extended downtime on any machine, therefore, could halt shipments. One of the major availability problems is that of the pit tractor. Servicing the stripping and clean-up operations over the entire pit and plant area, this machine must continuously cross rough, rocky areas... working in silica so fine and hard it's been described as "sharp as grinding compound".

"Tournatractor® only machine that can do our tractor work . . . "

Since 1952, Aubuchon Silica Mining's tractor jobs have been handled by a rubber-tired LeTourneau-Westinghouse Tournatractor. As Plant Manager Ira Kent says: "The abrasion, rough going, and back-and-forth travel is too rough for crawlers. Tournatractor is the *only* machine we've seen that can do our tractor work."

Tournatractor's main assignments at this pit are stripping overburden to expose new sandstone, and cleaning up around shovels. But its rubber-tired mounting, sealed anti-friction drive, speed and "go-anywhere" ability let it take on a full circuit of haul-road building and maintenance, stripping, shovel and general clean-up dozing at the pit, mill, and yards.

Maintenance now no problem

How has Tournatractor stood up under conditions so tough? Let Manager Kent tell it: "The last crawler we had was junk inside of 11 months. We've worked Tournatractor 45 hours a week for almost 5 years, *with no real trouble*. On our rough hard rock floors and with free silica sand all over, that's something!

"Our one and only major repair expense in all that time has been replacement of the torque-converter oil-seal and bearings. We've never done anything to the engine . . . never broke an axle, chipped a gear, or had a single major thing go wrong!"

Ask for a demonstration

Tournatractor has minimized maintenance problems for Aubuchon Silica Mining, while doing a lot of work quickly, efficiently. Investigate now what it can do at *your* pit. Let us send you full facts and arrange for an on-the-job demonstration. No obligation!

Tournatractor has plenty of power to doze rocks too big for pit shovel. Big, rubber-tired machine also cleans up fast to let drilling crew set next charges earlier.

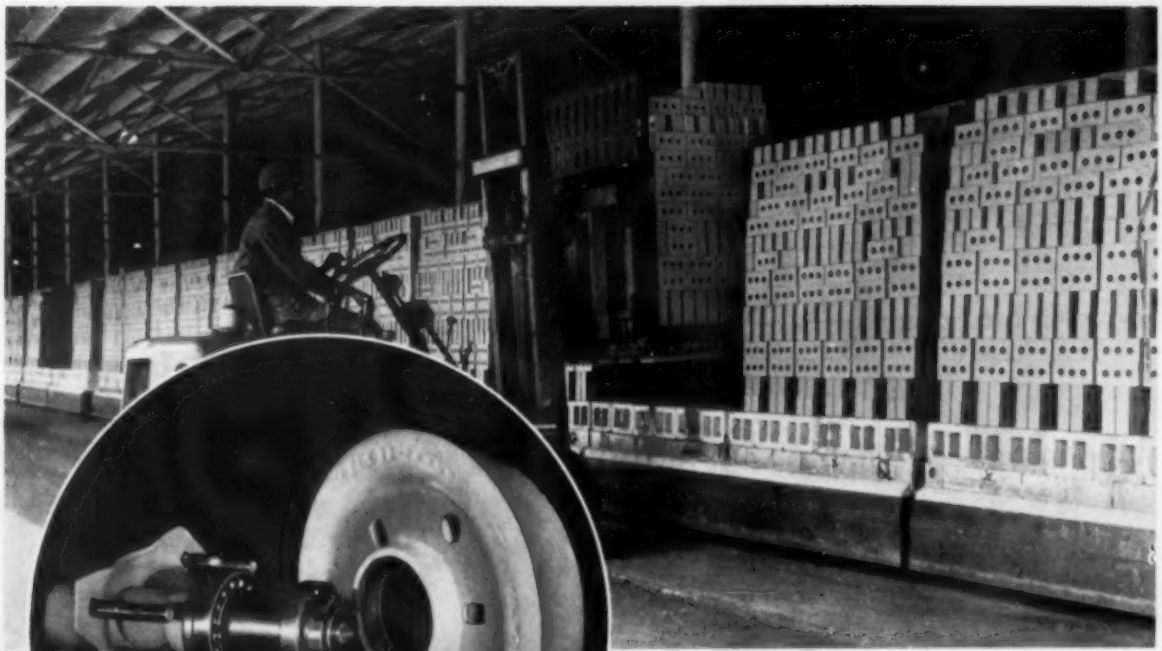
Stripping overburden, Tournatractor slot-dozes — using walls of slot as "natural sideboards". Method keeps dirt from spilling off edge of blade for bigger loads with same effort. "Fill-in" jobs like this keep Tournatractor busy the year 'round.

CT-1500-Q-1

LeTOURNEAU-WESTINGHOUSE COMPANY, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

Where quality is a habit

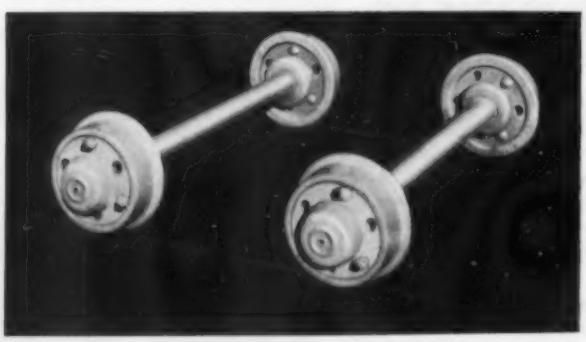


Here is the S-D "Floater", demounted. Bearings always remain in perfect alignment. No adjustment is necessary. Once bearing nut is tight, permanent adjustment is automatic.

Ask Mr. Homer Bryce, Henderson Clay Products, He Knows the Advantages of S-D "Floater" Wheels

"We have many occasions to praise the Sanford-Day Wheels and Bearings to visiting brick plant men . . .", says Mr. Homer Bryce, general manager of Henderson Clay Products Co., Henderson, Texas. "We think the best way," he continues, "to recommend or compliment S-D Wheels and bearings is to walk up to a loaded car and push it with one hand. 'Seeing is believing.' We are well satisfied with them."

Mr. Bryce further reports they lubricate the S-D "Floater" Kiln Car Wheels on their cars only three times a year. The new improved S-D Kiln Car Wheel runs free and easy, eliminates high cost maintenance and frequent lubrication. Now you can eliminate old and obsolete kiln car wheels and their costly everyday maintenance and lubrication. Install S-D "Floater" Wheels on your cars — proved in scores of brick kiln installations. Ask us for complete information on this revolutionary S-D "Floater" Ball Bearing Kiln Car Wheel. *Sanford-Day Iron Works, Inc., Knoxville, Tenn.*



We show above a car set of S-D Ball Bearing Floater kiln car wheels and axles. Note that the outer hub of the wheel is completely closed. The inner hub is protected by two metal grease seals. This feature effectively eliminates dust while retaining the special high temperature lubricant. Scores of brick plants all over the nation are recognizing the smooth running, low maintenance values of S-D "Floater" Wheels and are changing over rapidly.

SANFORD-DAY

KNOXVILLE TENNESSEE

Why...

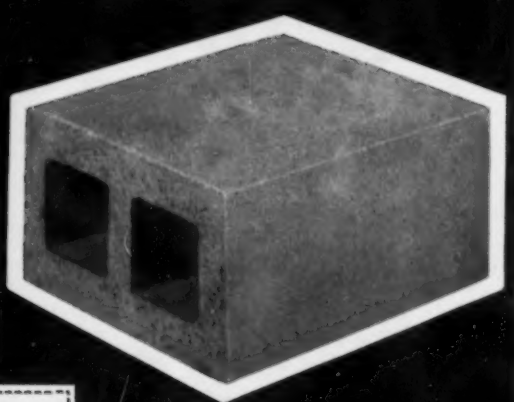
not let us tell you how

PACO CAR TOPS

cut replacement cost up to 50%?

Yes, we have the facts to prove that PACO Car Tops can reduce your replacement costs up to 50% . . . and we can also show you that nine out of ten users of PACO are completely satisfied customers!

You and your plant can also enjoy these increased savings on car tops. There is a PACO engineer as close as your telephone . . . or write us direct for complete information!



MAIL THIS COUPON TODAY!

NORTH STATE PYROPHYLLITE COMPANY, INC.
Greensboro, North Carolina

Please send me complete information about money-saving PACO CAR TOPS!

NAME_____

ADDRESS_____

CITY_____ STATE_____

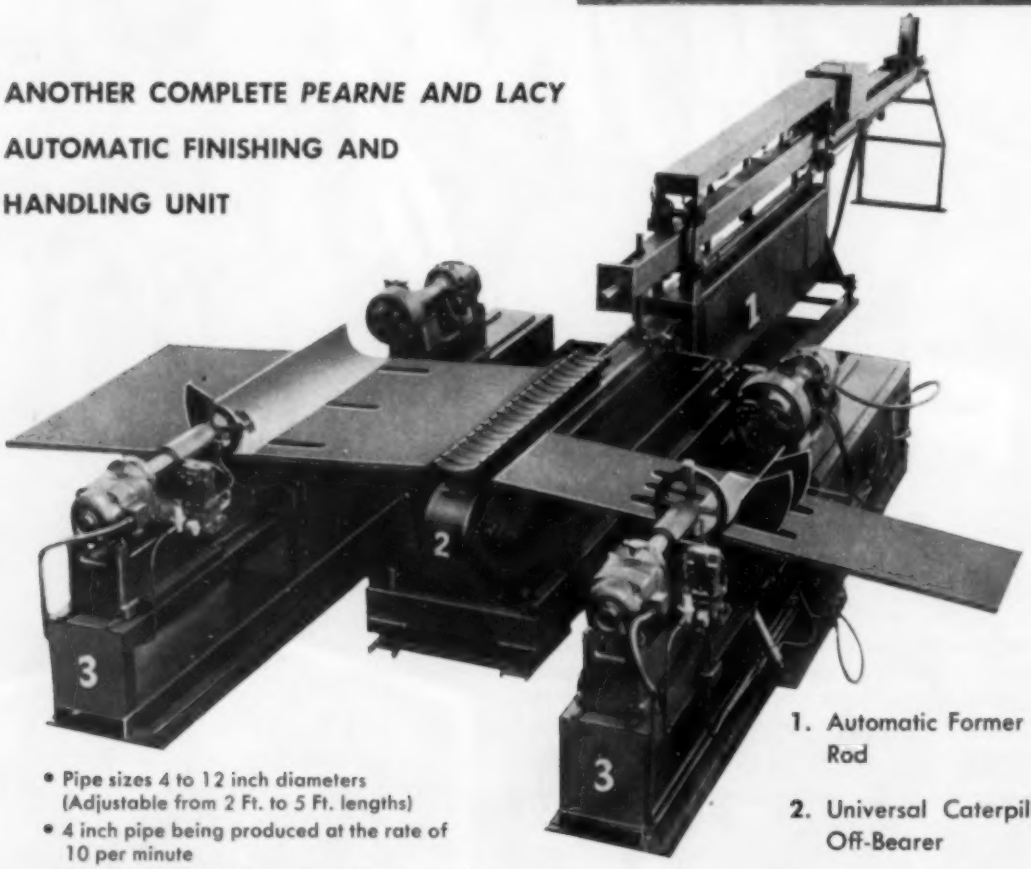
OTHER PACO PRODUCTS INCLUDE:

★ PACO PLASTIC
★ PACOCAST ★ PACO H.T. CEMENTS
★ PACO FIRE BRICK MORTAR
★ PACO SIDE CAR BRICK ★ PACO FIRE BRICK
★ PACO LADLE LINING
★ PACO HEATZONE COMPOUND

Equipment for the Ceramic Industry

PEARNE AND LACY INC. MACHINE COMPANY

ANOTHER COMPLETE *PEARNE AND LACY* AUTOMATIC FINISHING AND HANDLING UNIT



- Pipe sizes 4 to 12 inch diameters (Adjustable from 2 Ft. to 5 Ft. lengths)
- 4 inch pipe being produced at the rate of 10 per minute
- Two side take-off, decreasing change over time
- Additional equipment for horizontal or vertical drying available
- Dimensional uniformity and consistent quality finish

1. Automatic Former Rod
2. Universal Caterpillar Off-Bearer
3. Automatic Finishing Station

Patent Nos. 2,795,027 . . . 2,795,028

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P.O. Box 3368 Terminal Annex, Los Angeles 54, Calif.

Brick & Clay Record

October 1957 Vol. 131, No. 4

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FRanklin 2-6880

Established 1892,
now in 66th year.

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BRICK AND CLAY RECORD is indexed by Engineering Index, Inc.

Fire Prevention— A Year-Round Job

Fire prevention week is set aside during October each year, for good reason. With something like 200,000 dwellings destroyed or damaged by fire annually, it's important to remind the public in this way that a great amount of property is needlessly damaged.

Fire prevention throughout the world is synonymous with clay products. The proof of the durability of clay products, and their resistance to fire, is exemplified in the many structures that remain standing from the centuries of the past. In fact, no structure other than clay or stone remains from the past.

Is this then not a real selling point for modern clay products? Today, when 80% of all dwellings are built of combustible material fire safety is a rare attribute of a structure.

Not only combustibility but the use of glues which include dangerous, flammable chemicals when under fire are hazards in non-clay structures. The fumes of the latter can be deadly.

We do believe that fire safety is used as a selling point for clay products, but we feel that this week also should remind every clay products salesman that he has the one and only really fire-safe product—and should sell it as such.

The Editors

Dickey Buys Evens & Howard

The Evens & Howard Sewer Pipe plant, St. Louis, Mo., was purchased by the W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., recently. The purchase included plant, equipment, the 4-acre factory site, all inventories, and 20 acres of clay lands which supply the raw materials for the plant.

H. P. Wilhelmsen, president and general manager, and M. H. Hardin, executive vice president represented the W. S. Dickey Clay Mfg. Co. at the transaction. Mr. O. E. Buder, president and largest stockholder, represented the 100-year-old Evens & Howard Company. The amount involved was not reported but was understood to be about $1 million.

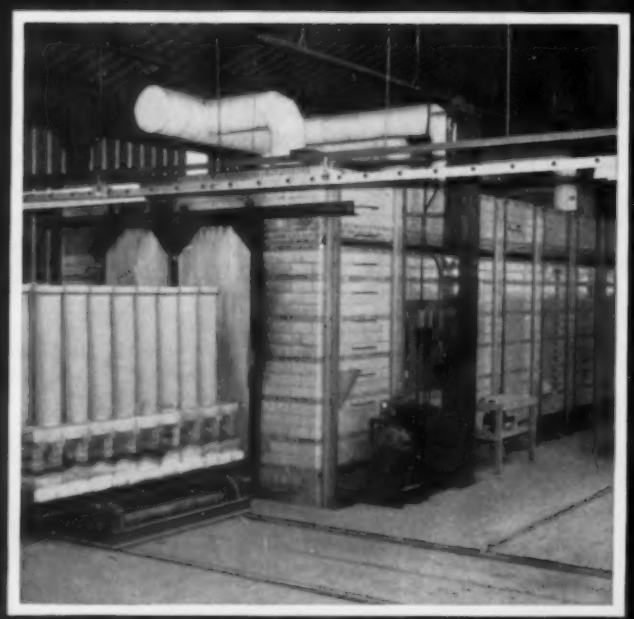
Dickey management was effective October 1st. There will be no immediate personnel changes. Emil Berra, Jr., continues to manage plant operations with occasional assistance by Paul B. Friley, general superintendent of Dickey operations. James L. Kilroy, of Dickey's home office, temporarily directs sales.

The newly acquired Dickey facilities have an annual output of 30,000 tons of diversified clay products. The facilities include a four story structure for manufacturing small pipe and a modern addition producing sewer pipe in all sizes up to 36 inches. The clay deposits are ample for 99 years of production at present rates of consumption.

Dickey plans to modernize the entire plant and expand production facilities to take care of the growing demand in the metropolitan St. Louis area as well as the outlying territory.

The plant will extend Dickey's service and sales area into St. Louis, eastern Missouri, and southern Illinois. The addition brings to seven the number of plants operated by the 72-year-old Dickey Company. Other plants are located at Birmingham, Ala., Chattanooga, Tenn., Meridian, Miss., Pittsburg, Kan., San Antonio, Tex., and Texarkana, Tex. Combined output at the seven plans will now exceed 330,000 tons of clay products per year.

ANOTHER **ALLIED** KILN INSTALLATION



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VITRIFIED PRODUCTS • BRAZIL, INDIANA

High production and top quality are consistently maintained with this ALLIED kiln at American Vitrified Products Company. Design of the kiln and close control of temperatures keep even *long-length* pipe perfectly straight, uniform in diameter, uniformly vitrified—all welcomed by the layer of pipelines.

FERRO

Allied Engineering Division

FERRO CORPORATION

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Automatic Brick Packaging Machine Begins Plant Test

The world's first automatic brick packaging machine, the SCR Package Line* has just been installed for pilot plant testing at the Des Moines Clay Co., Des Moines, Iowa, according to SCPRF director Robert B. Taylor.

The result of three years in intensive research work, the new machine is designed to automatically package 10,000 standard brick per hour.

A nation-wide meeting of member manufacturers of SCPRF at the Des Moines plant to observe the machine under production conditions is being planned for the near future. Additional demonstration meetings for other construction industry groups will follow, Taylor said.

*Reg. U. S. Pat. Off., SCRPF

Am-Marietta Authorizes 3 for 2 Stock Split

American-Marietta Co., Chicago, has authorized a 3 for 2 split of its common shares after reporting record high sales and earnings in the first nine months of 1957.

Shareholders will receive one additional share for each two shares held as of Sept. 27.

A quarterly dividend of 25¢, payable Nov. 1, was declared on existing common shares and those to be distributed.

Net sales of $59 million for the company and subsidiaries during the quarter ended Aug. 31, increased 16% over sales of $50 million in the same period a year ago.

For the first nine months, sales rose to $155 million from $136 million, a gain of 13.4%. Net income of $4.6 million for the third quarter was 3% higher than for last year; nine month earnings increased 11% to $11 million, setting a new record, as compared to last year's nine-month earnings of $9.8 million.

NEWS OF THE INDUSTRY

S&F Aglite Plant Delivers 800 Tons

The new Aglite plant of Sayre & Fisher Brick Co., Sayreville, N. J., is in operation with the first full load delivered recently. A barge loaded with 800 tons of the Aglite was delivered to the National Brick Co.; a few small earlier shipments had been made by truck. Reports also were that the Aglite firm has plans to build a similar plant for the North Central Lightweight Aggregate Co. of Minneapolis.

The Sayre & Fisher Aglite plant is reported to be the largest such operation in the world; they also claim that the bargeload represented as much of the LW aggregate as is available in one week in the entire country.

R. Frank Leftwich, Aglite president, has said that Sayre & Fisher "is now using twice as much of its clay to produce Aglite as it used in its brick plant at the peak of operations."

Leftwich reported that only 18 men are needed, on three shifts, to operate the aggregate plant.

The Minneapolis plant will operate with production of about 750 cu. yds. daily. The S&F Aglite plant is producing about double that figure.

Builders Brick Adds New Sales Outlets

Gene Salveson, recently appointed promotion director for Builders Brick Co. of Seattle, has announced establishment of three new Oregon distributors.

Reimers Masonry & Supply will handle the line in Salem; Scoberts Building Materials in Eugene will also handle the complete line.

Monroe Clay Products will handle only flue lining.

News From Canada

Shipments of clay and products to foreign markets dropped to $1.6 million in the first half of 1957 from $1.7 million in the similar 1956 period, according to government reports.

Building Products Ltd. of Canada declared a quarterly dividend of 45¢, payable Oct. 1 to shareholders of record Sept. 13.

Carl loadings on the Canadian railways of brick, building stone and similar products dropped to 27,556 cars in the first eight months of 1957, in contrast to 32,005 cars in the similar 1956 period.

National Sewer Pipe Co., Ltd. of Canada has applied for surrender of the company charter.

Canadian Government reports show that imports of clay and products dropped to $19.5 million in the first five months of 1957, from $22.5 million in the same period of 1956.

Ideal Brick Installs New Grinding Equipment

Installation of new grinding equipment in a new, separate building has resulted in "the best face brick we've ever made," according to W. P. Sanders, general manager of Ideal Brick Co., Fayetteville, N. C.

New grinding equipment includes Steele's heaviest roller and a #6 disintegrator; a single roll crusher with interchangeable screen; all of which is making possible maintaining of a 10 day supply of crushed material for the first time in company history.

Currently a mix of 35% shale and 65% clay is being used, fired in five sand-face colors including black, brown, pinks and reds.

With the new equipment allowing for higher quality product, Sanders is reported pleased with a noticeable rise in sales as a result.

C. Alfred Purkins Dies

C. Alfred Purkins, 67, president of Southern Brick Co., and executive vice president of Southern Brick & Supply Co., Richmond, Va., died Sept. 16 at his home.

Gladding, McBean Expands Pac. NW Staff

Carlton E. Goudge, vice president, has announced the expansion of the Gladding, McBean & Co. staff in the Pacific Northwest with the appointment of Neal R. Fosseen as manager of promotion for the Northwest division, Portland, Spokane and Seattle.

Jack E. Colwell has been appointed assistant sales manager of the masonry products department, Seattle; William H. Kopeinig, salesman of masonry products, Seattle; Jack A. Whorle, salesman for masonry in Spokane.

Santa Barbara Plant Up For Sale

The Santa Barbara (Calif.) Brick Co., formerly a part of McNall Building Materials, is being offered for sale. The Santa Barbara company has been in operation since 1955, with the older part of the McNall operation going back some twenty years.

Reason for the sale is reported to be a partnership dissolution, with one partner retiring.

Buildex Buys Lite Stone Agg. Corp.

Picture above shows view of New Lexington plant bought by Buildex.

The purchase of the Lite Stone Aggregate Corp, New Lexington, Ohio, has been announced by George Mackie, Jr., president of Buildex, Inc., Pittsburg, Kan.

Joyce

The addition of the Lite Stone plant to Buildex increases their production capacity to about 300,000 cu. yds. of finished product annually.

The New Lexington plant is of design similar to that of the Buildex' two rotary kiln operation. Buildex has been producing lightweight shale aggregate since early in 1952.

William M. Joyce, former Buildex sales engineer at Ottawa,. will move from Kansas City with his family to serve as sales manager at the New Lexington plant.

Kenneth Dickey Dies

Kenneth McM. Dickey, 66, eldest son of the later Walter S. Dickey, died August 29 at a Kansas City hospital. The elder Dickey was the founder of W. S. Dickey Clay Mfg. Co.

Kenneth Dickey worked at various jobs in the Dickey plant, and in 1935 was made a vice-president.

Now Available . . .

Both RIGID FRAME and Prefabricated *Pipe* Structures

Rigid Frames available in clear spans of 32', 36', 40', 50', 60', 70', and multiples thereof.

Pipe construction is completely flexible and adaptable to your individual needs.

R. G. VARNER STEEL PRODUCTS, INC.

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NEWS OF THE INDUSTRY

Officers Re-Elected by FTI

The three officers of the Facing Tile Institute were re-elected at the Institute's Annual Meeting here September 20. J. Carvel Tefft (second from left), Vice President, The Claycraft Company, Columbus, Ohio is the new Chairman; Paul E. Schneider (right), Sales Manager, West Virginia Brick Co., Charleston, West Va., was renamed Vice Chairman; and Joseph J. Cermak (left), Washington, D. C., was re-elected Secretary-Treasurer. Robert C. Turner (second from right) is Director of the Facing Tile Institute with offices in New York City.

Seven New SCPI Course Graduates

Pictured above, tow row l to r, McCord, Houk, Anderson, Dupler. Bottom row, Lotz, Ryner and Kraus; all new SCPI course graduates.

Seven more clay products industry men have graduated from the five-week Sales Engineer Training Course at SCPI, Washington.

The graduates include Jerome Kraus, SCPI-Region 6; William J. Houk, Clay Products Assoc. of the SW; Nels A. Anderson, Southern Brick & Tile Mfrs. Assoc., Atlanta; Gilbert Lotz, Stark Ceramics, Canton, Ohio; Harold A. McCord, Southern Brick Co., Ninety Six, S. C.; Ronald S. Ryner, SCPI-Region 5; and D. Dean Dupler, of SCPI's mason relations department.

Three FTI Officers Re-Elected at Meeting

All three officers of the Facing Tile Institute, national association of structural clay facing tile manufacturers were re-elected at the Institute's annual meeting in Washington, D. C., recently.

FTI Chairman for the next year is J. Carvel Tefft, Vice President, The Claycraft Co., Columbus, Ohio and the re-elected Vice Chairman is Paul E. Schneider, Sales Manager, West Virginia Brick Co., Charleston, West Va. Joseph J. Cermak was renamed Secretary-Treasurer.

One of the highlights of the annual meeting was the welcoming into the Facing Tile Institute of the Arketex Ceramic Corporation, Brazil, Indiana. In greeting Arketex President John A. Stelle, FTI Chairman Tefft commented that the Institute was proud to have this important facing tile manufacturer in FTI along with other progressive manufacturers who realize the value of joining together to increase the sales of structural facing tile.

The Director of the Facing Tile Institute is Robert C. Turner, who has offices in New York City.

C. L. Lester Dies

Carlton LeRoy Lester, 72, retired vice president and general manager of Pine Hall Brick & Pipe Co., Winston-Salem, N. C., died Sept. 10 at a Danbury hospital, following a long illness.

He joined Pine Hall in 1922.

Bruce Kurzweg SM For Glen-Gery, Reading

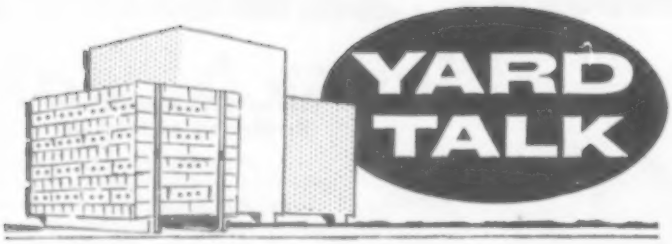
Bruce R. Kurzweg has been appointed sales manager for the Reading (Pa.) division of Glen-Gery Shale Brick Corp., according to an announcement by president R. G. Eshenaur.

Kurzweg has been a G-G salesman for the past year. In his new post, he'll supervise sales of brick from the Reading Shale, Wyomissing and Shoemakersville plants His office will be at the Wyomissing plant.

Acme Gets Additional Tax Refund

Acme Brick Co., Tex., has recovered another $8,339 as overpayment of income taxes and as a follw-up to a prior suit in which Acme won some $785,000 on a similar point.

The latter case, involving taxes paid in 1951-53, is being appealed by the government.



"To further improve the quality, texture and beauty of Adel Clay Products . . . we have added Additive 'A'—which is a new patented formula that permits a better wire cut, prevents chipping in the dry state, and which helps us to manufacture stronger brick and tile products." Quote here is from a folder put out by Adel Clay Products of West Des Moines, Iowa, plugging the fact that "Something New Has Been Added." The folder tells of the job done by the additive and what the better product will mean to the customer.

Both Additive A, by Kimberly-Clark, and Brickaid, by Spencer Chemical, are being used in several plants in the industry. Both products seem exceptionally helpful in many operations in overcoming problems, and we're sure you'll want to read two full feature stories in next month's issue reporting exclusively on these two brand-new products as used in two plants.

This Adel folder is an interesting example of a plant using a modern development in production as a sales tool, and an idea that more plants could use effectively.

While we're on the subject of promotion material, we see that General Shale has used an ad on the A-bomb test results. The ad, running evidently in the same issue as the story announcing the test results, has as its headline "Proud Survivor of an Atomic Blast" and some copy saying, "Brick walls of this structure bend with shock wave, snap back undamaged." It's good to see one manufacturer taking advantage of a great opportunity for industry promotion and public service. Ad shows a picture of the test schoolhouse.

We've heard that the Fort Collins (Colo.) Brick & Tile Co. is about to be re-opened. H. E. Scott, president of Mountain Brick & Supply with offices at Hoisington, Kans., told the local paper that the plant was to be completed, after a $50,000 expansion, within a period ending about the middle of October. Production plans call for production of about 500,000 a month. Three existing up-draft and two down-draft kilns will be used, according to Scott. U. S. Burnite operated the plant starting in summer, 1956, as a pilot plant for Burnite manufacture. It's been idle for about a year.

Robert L. Carr, assistant controller of Belden Brick Co., has been elected a member of the Ohio Society of Certified Public Accountants .

Everytime we get talking big production, we're stopped short by recalling the production of the London Brick Co., Ltd. of Great Britain. To quote the company in a recent report, "You will be interested to know that our daily record make now stands at 8,587,369 bricks." To continue quoting, ". . . in spite of bad weather condition during the year, the deliveries made by the company vehicles reached an all-time record of some 915 million brick and brick equivalents which were conveyed over 20-1/2 million road miles."

The company also notes in their report that extensive research in kilns operation, and use of instrumentation, has enabled them to save some 4,500 tons of coal in the last nine months, evidently on only one kiln!

As a final point on the London operation, they've converted an out-of-use pit into a 250 acre lake, holding eventually about 3,700 million gallons of water; the company also did some landscaping work, turning an "eyesore" into a neighborhood beauty spot. All of this, by the way, was reported in the very interesting magazine, The British Clayworker.

Robinson Clay Product Co., Akron, Ohio, recently honored two of its truck drivers for an exceptional safety record. William S. Maple, a Robinson highway driver for 13 years, has completed a million accident-free miles; Robert Young, with 16 years, has 1,050,000 miles and only one chargeable accident. Both drivers were given government bonds by George Kugler, motor operations superintendent for Robinson; other speakers at the affair were Clark Sutherland, vice president, and E. F. Malaney, traffic manager.

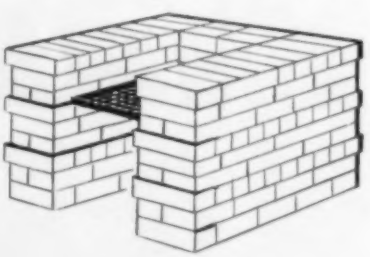
Somewhat along the same line is information sent to us by Bob Foster of Brick & Tile Service, Greensboro, N. C. One item is a sales department letter from General Refractories Co., telling of how Harry T. Foster (Bob's brother) saved a 60-year-old man from drowning in a Knoxville motel swimming pool. Harry pulled the man out, applied artificial respiration for nearly an hour, and saved the man's life beyond doubt. Harry is a Birmingham area salesman for General.

Another Foster note concerns the switch from the title of "Your Tobacco Market" to "The Brick Capital" by Sanford, N. C. City claims that more brick are made within fifty miles of the city than in any other spot in the country. The new tag will appear on the city license plates.

A while ago, we had an item from Brookhaven about the use of clay solar screens. A large library-administrative unit at Riverview Gardens High School in St. Louis is using the solar screens on the upper stories on two sides. The screens will "rest on cantilevered extensions of the reinforced concrete floor slabs."

A new type of brick is being produced by Oskaloosa (Iowa) Clay Products, according to manager Wayne Barrett. Main feature of the product is reported to be a new texture. The brick come in buff and cream colors . . . they have 15 varieties in type, shape, size and color of brick for the customers. The initial run of the product was 400,000.

Emmett Poston has announced "Postone," a new line of rock-faced brick in "stone colors of mingled buff, grey, pink, ivory and reds," kingsize and standards.



Dean Ramey, executive secretary of the Mississippi-Louisiana Brick & Tile Mfrs. Assoc., sent us some very interesting plans for a simple-to-make, mortarless backyard outdoor cooker. It's a project for a do-it-yourself, using 204 brick; three ventilator grills; a cubic foot of sand. Might make a good promotion idea for some other people, and we're sure Dean will be glad to send a sample folder upon request. Miss-La address is Box 4501, Fondren Station, Jackson 6, Miss. Something along this line would be handy to pass out at home shows, model homes, etc.

NEWS OF THE INDUSTRY

PERSONALS

Lucas E. Pfeiffenberger, formerly of Alton (Ill.) Brick Co. in charge of lightweight aggregate production and sales promotion, has been named technical director of the Expanded Clay and Shale Assoc. His first task with ECSA will be to supervise a laboratory testing program being developed by the association.

John F. Wooler Jr. has been appointed Chicago divisional sales manager for Geo. P. Reintjes Co., Kansas City. Wooler formerly was with General Refractories Co. at New York, Philadelphia and Chicago sales offices.

A 45-year employee topped the list of service awards made recently by Robinson Clay Product Co., Akron. The 45-year man is **Emerys J. Crocker** of the Toronto branch. Other winners of awards were **Frank Rumfola,** 40 years; **Dana A. Rowan,** 35 years; **Elmer Ryan, Milan Borojevich, Charles Maronia, Dominic Cardinale** and **John Evanko,** all 30 years.

Joseph M. Franz has been named Philadelphia District sales manager by Harbison-Walker Refractories Co. Franz has been a member of Harbison-Walker's sales organization since 1924, most recently in the Detroit District Office.

Joseph Peters has been appointed credit manager of Illinois Brick Co., Chicago, according to **John Goodridge.** president. He succeeds **Victor Galbraith,** credit manager for the lost ten years, who is retiring.

Chehalis (Wash.) Brick & Tile Co. has appointed **Dan Tibbitts** salesman for the company in the entire Pacific northwest. Chehalis this year celebrates their 70th year of business.

Joseph J. Eleison has joined the ceramic engineering staff of Pomona Tile Mfg. Co. Eleison had been with Robinson Brick & Tile C. of Denver previously.

Appointment of **Ronald S. Ryner** as regional director has been announced by William Avrutis, executive director of SCPI-Region 5. Ryner succeeds **Hugh MacDonald** who resigned to become secretary of the Brick & Tile Institute of Ontario, Canada.

The election of **Edmond C. Powers** and **Robert L. Baumgardner** as vice presidents has been announced by Charles Farran, president of Griswold-Eshleman Co., Cleveland. Powers, who has been manager of the agency's public relations department for 23 years, will continue to serve in this capacity. Powers has for some years been Secretary, Sanitary Engineering Committee of the NCPMI.

Obituaries

A. Blair Richardson—73, a director of Utah Fire Clay Co., died Sept. 6 after undergoing surgery in a Salt Lake City hospital.

Charles W. N. Young—85, retired sales manager of the Kittaning Brick Co. of Pittsburgh, died in mid-September.

E. R. Hanford, Sr.—72,president and co-founder of Hanford Brick Co., Greensboro, N. C., died of a heart attack on Sept. 8.

John M. Bayliss—51, district sales manager of Harbison-Walker Refractories Co., died in the Lancaster, Ohio hospital on Sept. 13, following a heart attack.

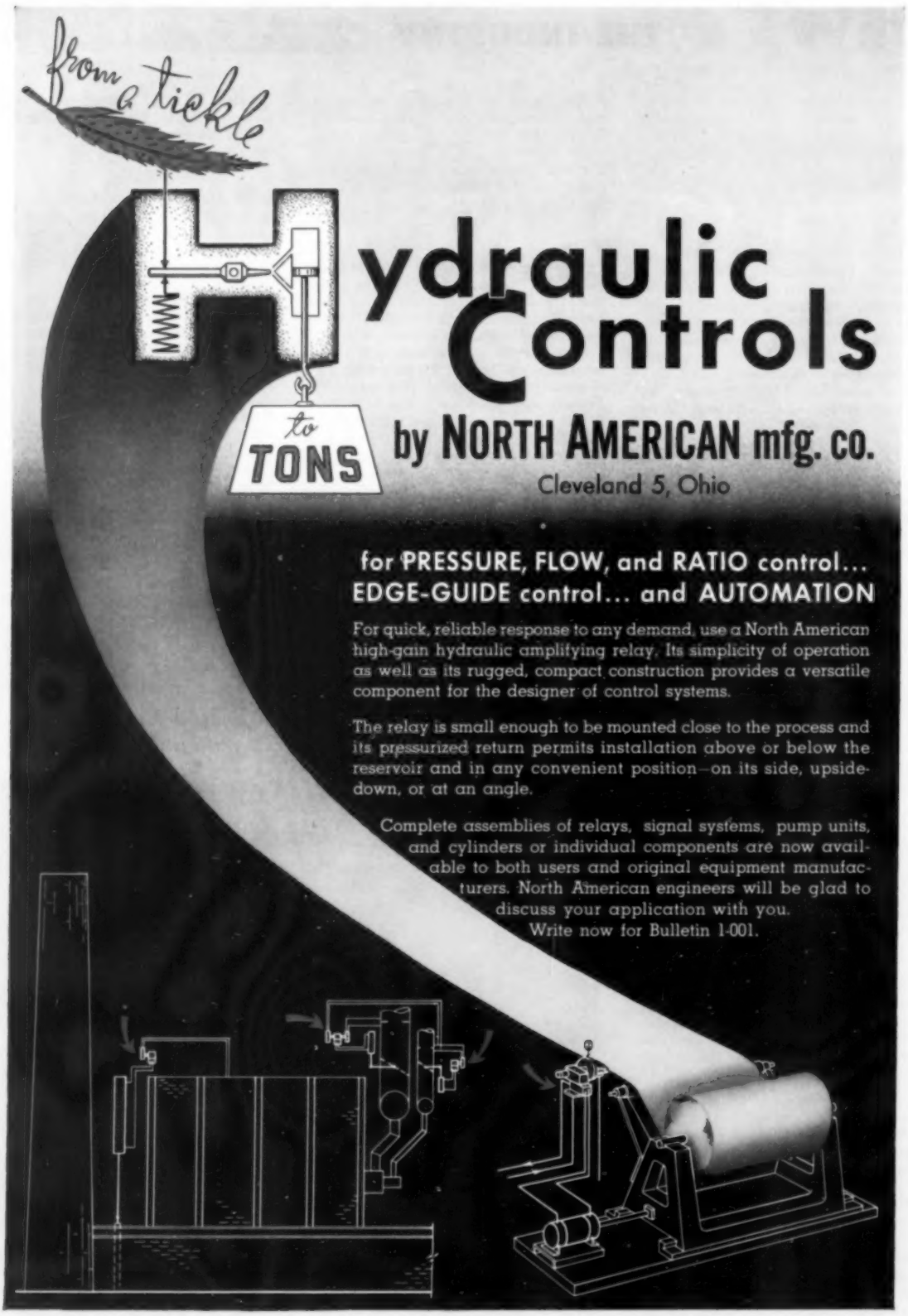
Benjamin R. Capshaw—60, assistant superintendent at the Louisville (Ky.) Fire Brick Co. died Sept. 20 after suffering a heart attack at his home. He had been with Louisville some 40 years.

Samuel O. Conkling—88, former partner in the Conkling-Armstrong Terra Cotta Co., Philadelphia, died Sept. 6.

Jacob Bauman—93, died Aug. 27 in his home at Perrysburg, Ohio. Before his retirement 30 years ago, Bauman operated a drain tile plant near Toledo.

All Ceramic Office For Ceramic Customers

Waiting to show off his customer's products, Dr. J. T. Robson, vice president of Allied Engineering Div. of Ferro Cor., Cleveland, had his new office completely lined with different types of ceramic tile. Two walls are covered with green tile, one semi-matt and the other glossy. The rear wall has brown mottled Vitrineer; floor is light green floor tile. All tiles were, of course, produced in Allied-built kilns.



Hydraulic Controls

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for PRESSURE, FLOW, and RATIO control... EDGE-GUIDE control... and AUTOMATION

For quick, reliable response to any demand, use a North American high-gain hydraulic amplifying relay. Its simplicity of operation as well as its rugged, compact construction provides a versatile component for the designer of control systems.

The relay is small enough to be mounted close to the process and its pressurized return permits installation above or below the reservoir and in any convenient position—on its side, upside-down, or at an angle.

Complete assemblies of relays, signal systems, pump units, and cylinders or individual components are now available to both users and original equipment manufacturers. North American engineers will be glad to discuss your application with you.
Write now for Bulletin 1-001.

major plant expansion triples Miller fabrication facilities

Partial view of added facilities at Miller Equip. Company's Salisbury, N. C., plant. The expansion adds approximately 20,000 square feet to the present plant capacity. Note the newly installed craneways for fast, efficient handling of materials and fabricated units.

The Miller Story . . .

Since the early forties, when Miller Equipment was organized, the company has grown both in size and scope to meet the challenging needs of the clay products industry. Through the years Miller's rapid growth has been keynoted by a keen awareness of the conditions common to our ever-demanding field.

Miller's newest physical plant expansion, a part of a constant reappraisal of material and non-material facilities, represents a continued effort from every department of the Miller organization . . . sales, manufacturing, and engineering . . . to serve you better. Call or write Miller today.

Left photo shows substanial portion of Miller expansion. Batteries of welding machines are shown along with many types of machines used in fabricating Kiln Cars, Dryer Cars, Hydraulic Units, Hammermills, and other types of clay working equipment.

Right photo shows a Foster Fastermatic Automatic Lathe tooled to face, rough bore, finish bore, and groove a Kiln Car wheel in one chucking. Precision tolerances have made this Timken bearing equipped wheel easy in maneuverability once installed on dryer or kiln cars.

The new building is divided into three separate units, each bay equipped with a five-ton overhead crane. All three units span the 20,000 square feet expansion. In addition, each crane has easy access to a Southern Railway Spur which runs through the building.

Miller Equipment Company

P. O. Box 1566 • Telephone 6300 • Salisbury, N. C.

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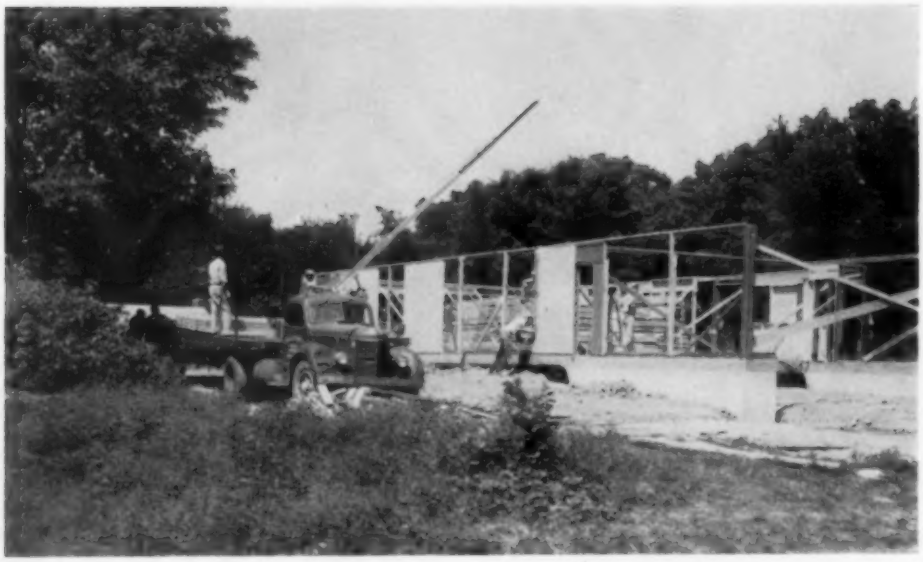
138 Harriet Drive
San Antonio 12, Texas



All The Brick In A House Put Up In 8½ Hours!

SCPRF uses panels to set 1,200 sq. ft. of brick; no manual lifting needed as walls go up in good-looking house.

Crane at left was used to hoist panels into place.

Late in August, editors of BRICK & CLAY RECORD watched all the brick in an 1,600 sq. ft. house go up in just about 8½ hours. During placing of all this brick, there wasn't one example of actual manual lifting of the brick.

These brick, all made up in the SCPRF-developed panel, were trucked in from the Geneva, Ill. laboratory to the house going up on the east side of Geneva. Once there on the truck, a telescoping crane lifted each panel as needed with use of a suction hoist . . . swung the panels into place . . . the panels were fastened with two bolts . . . and that's it, except for the final grouting between panels.

All of the panels, in stacked pattern, fitted snugly and securely into the wall with no problems encountered in fitting in the last one or two into a particular wall.

Cost is Low

With some 1,200 sq. ft. of paneling put into place, total costs of erection came to about only 30¢ per sq. ft. The breakdown of this erection cost includes a 16½¢ labor cost per sq. ft.; putting up the supporting angles was about 5¢; the grouting cost per sq. ft. ran at 7 to 10¢. The labor crew cost about $23 per hour.

Indicative of the surprising speed of erection was the fact that the brick in the walls went up at the rate of 142 sq. ft. per hour, with the entire 1,200 sq. ft. put up in 8½ working hours.

Each panel took only a couple of minutes to put in place.

Above is a detail of the panel mounting units. At right, suction hoist puts panel into place on the wall.

It's possible that time might be speeded up even more inasmuch as the only crane available to SCPRF was partially manual-operated and couldn't work with maximum speed.

SCR Brick Basement

Recapping the house's construction briefly, the house is a contemporary-design one story ranch. The basement was made of SCR brick entirely. To form the anchoring base for the panels, metal bolting strips were run around the perimeter on top of the SCR brick and on the top framework, as shown in the accompanying photos.

One of the most notable features of the panel-work was the extremely fine joints. The "mortar" was very smooth, almost glass-like. Actually, of course, the mortar is an integral part of the panel. The quality of joints were remarked on by several of the bystanders.

Line-up of the courses and panels was noticeably excellent. The house as shown here on the day the panels went up was still about a month away from full completion. But even in the unfinished state, it's easy to see the quality and good appearance that'll be evident in the finished house.

It's equally obvious to see the great potential of this method of construction, both for housing and for larger structures. Between the factors of time, low cost, top appearance, greatly reduced manual labor, and load-bearing strength, these panels seem to have a great future.

The time is near when some 36 to 50 brick can be put into place in a minute or two, with no heavy lifting, and only two bolts needed to fasten the panels.

C. B. Monk of SCPRF watches fastening of panel.

A. P. GREEN
INSULATING FIREBRICK

CUT FUEL COSTS . . . INCREASE PRODUCTION IN PERIODIC KILNS

There has been a tremendous increase in the use of lightweight Insulating Firebrick for lining both round and rectangular down-draft kilns.

An average saving of 20% in fuel has resulted in kilns using Insulating Firebrick in only the kiln crowns. A 35% reduction in fuel costs was accomplished in a recent installation of A. P. Green G-26 Insulating Firebrick in the side walls and crown of a 28-foot diameter, coal-fired kiln.

Other advantages of A. P. Green Insulating Firebrick in periodic kilns are—reduction in time of firing cycle because of the faster heating and cooling of the lightweight lining; more uniform heat distribution throughout the kiln and easier temperature control—resulting in fewer rejects and less breakage of the ware; more comfortable working conditions because of the faster cooling of the kiln; and ease of weatherproofing the much cooler crown with low melting asphalt base compounds.

Let your A. P. Green Representative assist you in selecting the proper quality of Insulating Firebrick for your kilns from A. P. Green's complete line—six different brick for temperatures from 2000° F. to 3200° F. He's listed in the classified section of your telephone directory . . . or write direct.

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Brick & Clay Record Announces:

A Ten Year Program Designed to bring More Profit, Sales, Production To The Clay Products Industry

BCR announces a program to vastly increase the size, profit, potential and market area of our industry, using both current products and the many new developments.

BRICK & CLAY RECORD, with this issue, is launching a ten year program through which it is hoped that the industry may increase its production and sales of clay products.

This program was carefully weighed by many persons in the industry and its principles in general have been agreed to. How big the industry should be in ten years was indeed a controversial point. But all agreed that there must be a growth. All agreed too that the potential for growth is present.

Attaining a growth goal will depend on many factors. It will depend on the mental approach that the industry takes to the entire matter—how it will educate itself and its customers in accepting the fact that here is a new and better building material for the construction industry. And it will take patience.

What will the growth be in a ten year period? The editors of BRICK & CLAY RECORD have coined the phrase "14 Billion More in Half A Score," meaning that the industry could be a 21 billion brick equivalent industry in ten years. But as one of our consultants pointed out, ten years is a short time in the life of an industry and the wheels of progress move slowly.

(Continued on next page)

We'll need more production, more dealers

For instance, the industry's efforts toward research began in '48 and today the industry is only beginning to feel its effects. The question of depletion was stipulated back in '48 and today, 9 years later, depletion is still a big question. In a similar vein, attaining a goal of greater production will not come rapidly. It will come, however, if the same determination, cooperation and enthusiasm are put behind it as was put behind research and depletion.

Packaging is another attainment that the industry can be proud of, but it too took much time. The fully automated packaging system is now getting its first production trials.

Besides the will to do, the industry has much to rely on for growth: it has the products. There are the bread and butter products—the brick, tile, terra cotta, facing tile—and it can look forward to the ultimate development and use of research products, from SCR brick through lightweight units.

We Have Strong Organization

The industry has a broad base upon which to build: the Structural Clay Products Institute with its well organized staffs, to promote, advertise, engineer and create the ammunition which leads the way in distribution and application of clay products.

Besides a strong central organization, the Structural Clay Products Institute, and a research program in the Structural Clay Products Research Foundation, the individual plants are strengthening themselves at the present time so that plant operation and plant research and plant ingenuity will add to the list of products and methods of distribution now developed by the central organizations.

It is said about progressive industries that a major portion of profits comes from products less than ten years old in development. This may be true with the clay products industry, because so much thought is being put upon improving present products and developing new ones.

Our industry is based on a strong organization

Research will prove vital in industry progress

In coming months BRICK & CLAY RECORD will undertake to publish many articles which will cover the many facets of a program to attain a growth. There will be articles on merchandising, distribution, manufacturing, sales, competition, business organization and so forth—all the facets which are involved in solid growth.

Periodically it is hoped that a tally can be made on progress, and the industry's cooperation will be asked to bring about such a report.

In the following pages the first step is taken, by revealing the trends in demand of the building industry and how the industry can fill the bill today. Certainly what is demanded today will not be demanded 8 or 10 years from now. The demands will change. And this program as well as the industry will itself change to better meet the changing demands.

These pages will present some of the problems as they appear today, and how the market possibilities look from here.

The Modern Builder What Does He Want In Today's Market?

His customers are demanding more comfort and luxury; at the same time, they want speed of construction, safety, durability and low cost

The concept of satisfactory construction methods and products has changed in recent years just as drastically and dramatically as has consumer demand in such dissimilar areas as automobiles, clothing and appliances.

The pattern of heating has gone from wood and coal to oil and gas . . . and in the not too distant future, to atomic and solar heat. The same changes are taking place in lighting sources, power and energy. The day may not be far off when each home, factory or office building will be self-sufficient, with no wires or pipe necessary to supply utilities. It may come that atomic reactors or solar power units can be a part of each structure, supplying the heat, light and power needed.

Man Demands More Comfort

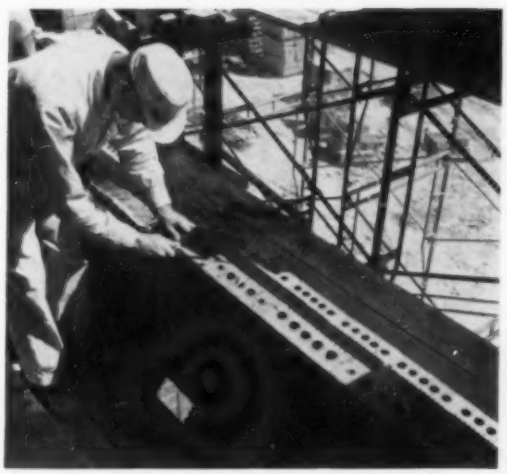
Not only the utilities of man but also the comforts are multiplying rapidly. No longer is man content with just having heat in winter; now he must have air conditioning all year around. He is demanding also safety from elements and from man-made bombs. In all aspects of life, he demands more than just the necessities of life; more and more he wants the luxuries.

Man's ingenuity and energy have given him those demands, and others are to come in the years ahead.

Pattern Applies to Construction

The old concept of shelter has passed from the construction market, changing its pattern as the other patterns have changed in other industries.

Buildings today are reflecting the demands of the public to a great degree. Today's buildings must be utilitarian and functional . . . but must offer considerably more than these two alone.



We must supply what the builder wants today

Complicating the full satisfaction of demand are factors such as prices, building demands, and building materials and methods available. Another constant factor, of course, is changing taste and demand as our economy grows and expands.

Reflecting these changing demands, in the large office building today the architect and owner want color for beauty, large panels for quick and easy construction (as far as possible), lightness of weight for economy and ease of construction, and a growing concept, which should develop in the future and over the next 10 years, is the need for flexibility of design. Here is where possibly the smaller clay unit will play a great role.

In the same way, the homeowner or builder wants a complete combination of maximum beauty, comfort and utility.

The school, church and hospital also insist upon beauty, color, low cost and safety.

Demands Will Be Supplied

Translating the wants of man into building products that are available to the architect and builder, industry has been alert to put into production what the buyer wants.

Advances in construction mean more brick housing

In the matter of color, for example, the porcelain enamel industry has gone all out to produce every color of the spectrum and applied these colors to steel and aluminum. The demand for color has been satisfied in this way. New methods of drawing metals makes possible the enhancing of the metal panels with designs incorporated right in the metal.

All of the metal panels, whether as glass-coated steel and aluminum, as stainless steel or anodized aluminum, or even bronze, can be made in large sections for speed of erection on the site. The panels in many cases are complete wall units—insulated and backed up with an interior finish.

Floors, ceilings and roofs are being erected with large pre-cast beams or poured lightweight concrete on metal forms. Both methods were basically developed to speed construction.

Partitions are made of large units, easy to put in place, light, and capable of easily acting as chasers for conduit, pipe and utility supply lines.

What has been said of large structures is pretty much true also in the home. Today's homeowner wants color, some large components, low cost, rapid erection and flexibility in design—where again smaller units are essential.

To summarize, therefore, the properties of building materials that the architect designs in both large and small buildings today, the demand is for:

1—Color; 2—Large Units; 3—Light weight; 4—Large beams; 5—Reinforced and prestressed units; 6—Large partition units; 7—Safety; 8—Flexibility of design; 9—Modern comfort and beauty; 10—Low first cost and maintenance cost.

These, then, are the 10 commandments of today's construction needs.

". . . the trend seems to be back to flexibility"

Clay Products Can Supply The Demands of Builders

Our industry has all of the product requirements needed; color, beauty, low cost, durability, ease of construction and design flexibility

Now that the demands for various qualities in in construction materials and methods has been pointed out and what competition is supplying, how does the present clay products industry meet these demands?

On these pages the demands will be broken down to show the many ways in which clay products meet the needs and preferences of architects, builders and owners today. As pointed out before, these demands will change in the future and clay products will change with the demands.

The potential for brick in interiors is unlimited

All The Colors In The Spectrum

To meet the challenge of competitive materials today in large structures, this industry is intensively developing new colors and shades for brick and tile.

The development process, relatively recent and moving with great speed all across the country, is resulting in colors that span the spectrum. Several manufacturers today are producing colors in every shade, hue and tone imaginable. These colors are being applied as high glazes, as matts, as glaze over texture, as colored sand-finish, as a surface stain, and as a colorant all through the brick.

No longer is variety of color limited in clay products. Clay products present a decided advantage in color because color is a permanent part of the structural member of the wall—at very little additional cost.

When today's architect or builder demands color, the industry can produce the colors wanted to meet virtually any shade desired.

Flexibility in Design

There is a great deal to be said for flexibility of design in smaller units. The pendulum of design has been swinging toward larger units and at the same time stifling flexibility of design. Now perhaps the pendulum is beginning to swing back, and there is a greater cry for flexibility. Note the trend to beauty in the solar screen. It is an exemplification of the move away from large units and the desire for flexibility and the beauty that can come from flexibility. Architects in the southeast have expressed their delight in the colored clay products, not so much from the standpoint of the colors available, but that they will have the flexibility of design because of the small unit and with color.

The great symphony which was written for the Centennial of AIA earlier this year and presented under the sponsorship of Structural Clay Products Institute exemplifies this trend back to design, to flexibility in design and back to nature, natural colors, natural products to bring out beauty.

Furthermore, the masonry process which is under experiment in many localities was designed to help meet the labor costs of putting smaller units into the wall. This process will be an important link in this trend which may be developing right now. It will tie the bread and butter products of the industry with the future.

Large Units For Quick Construction

The development of a new product, of a new use for a product must go through 4 definite stages. First, it must be researched; then it must be investigated in the laboratory for its practicality. Once this is established the third stage then becomes a field testing operation. Finally, in the fourth category the product must be made available to the consumer. Each of these stages is important and should be carefully designated.

These statements are made particularly at this point because many of the developments which we will talk about hereafter are in one of the earlier stages and it should not be construed that the products are available on the market. These products may be in pure research; they may be in the laboratory practicality stage; they may be in the field test stage, and like SCR brick, they may be already available.

Today from 36 to 50 or possibly more brick can possibly be set into a wall as one unit. Putting up all the brick in a one story house in one working day is going to be practical and possible, as shown elsewhere in this issue. This development, the prefabricated panel, is now in the laboratory practicality stage.

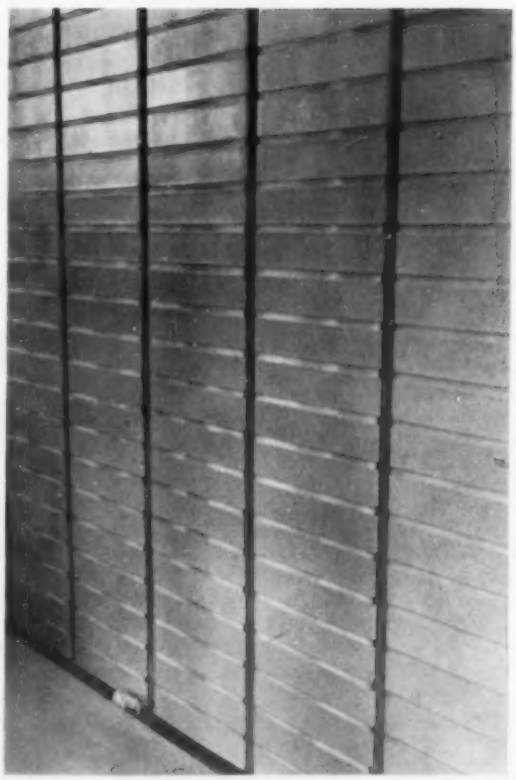
The research laboratories of SCPRF have designed and developed a simple means of making prefabricated units, allowing for 36 or more brick to be put in place and fastened in one operation, with manual labor cut to a minimum.

These units are very attractive; are load-bearing within the design limitations, and require no complicated construction methods or changes.

Since the sections are modular, a design advantage is added, allowing for easy construction and design of the buildings.

The panel units, applicable to both housing and large structures, are composed of 2″ brick sections cemented into a single unit, all ready for installation. Installation is extremely quick, with the panels being hung and bolted onto a steel or concrete frame. Interiors can be finished as desired.

No longer will it be necessary to set brick one by one . . . it will be possible and practical to set nearly half a hundred at a time, and still to maintain all the beauty, color and practicality of a regular brick wall.



Soon we'll lay 36 or more brick at a time

SCR Masonry Process Ready For Use

A combination of corner pole, graduated-movement scaffold, and proper mortar handling are integral parts of the SCR masonry process which is producing, in many areas, brick work at a greater rate of productivity.

The obvious advantage here, aside from the effect on costs, is to enable more clay products structures to be built in the same time as by conventional methods. Therefore, more extensive use of masonry is mechanically possible, offering greater sales and production possibilities.

The SCR masonry system, although it is ready for widespread use, is still in the stage of being field tested.

The need for leveling by the bricklayer is lessened or eliminated in most instances, and the need for excessive manual handling of brick is eliminated. The bricklayers' job is therefore simplified and made easier physically so that he can be more productive with less total labor and fatigue. Because the bricklayer job is made easier for him and his productivity will rise, there will be a greater demand for brick work and the work will open up for him. Modernizing this very old and fine profession will create a demand for his work so that along with this expansion there will be a demand for possibly 2 or 2½ times as many artisans to put clay products in the wall as there are today. This will broaden the masonry trade and its organization.

The greatest advantage, therefore, of the SCR masonry process would be that more brick houses and structures can be built more easily in less time and less cost, offering greater opportunity to the bricklayer and the manufacturer. This system has been developed and tested sufficiently so as to be completely practical in today's construction.

There'll be greater opportunity for bricklayers, too

Paving Block; Answer to Two Problems

An 8 x 8 x 4″ paving block, fully reinforced and anchored, has been tested by government departments and found fully satisfactory for airplane runway construction for use by heavy bombers and by jet planes with their hot exhausts.

This paving is ideal for aircraft use, and is low in cost. The units are not affected by heat; they do not need extremely heavy bases to withstand the shock of landings by extremely heavy bomber and cargo planes.

As far as durability is concerned, these units have been under performance tests since 1938. One test pavement, built then, stands today in the same condition as when set. This pavement has required no maintenance in 20 years.

Here, indeed, is the pavement for the truck travel of the future. It's questionable if the truck industry could build trucks heavy enough to hurt these paving blocks.

Re-Nu-Veneer Can Be Big Business

Re-nu-veneer, a product in the field testing stage, promises to open up an entirely new market for clay products—one that has not been explored to any extent for many years.

Re-nu-veneer is an extremely simple means of adding durability, beauty, and ease of maintenance to many older houses and buildings at competitive cost.

The job of adding the Re-nu-veneer to the older surface is by no means complicated or lengthy. The work, simplified, adds up to tacking special flat brick units to a metal strip, serving as a base, attached to the older wall area.

Actually, wide open as is the remodeling possibility, equally great is the use of Re-nu-veneer as a decorative material in interiors both of homes and larger structures. It would be as easy to put up a brick surface on an inside wall as to apply it to the exterior.

The cost can be very competitive, particularly as sales volume and production increases.

The Re-nu-veneer units have all the advantages of clay products, including the great variety possible in color, texture and appearance, plus permanence and freedom from maintenance problems.

It should be noted here that Re-nu-veneer will not in any way replace standard brick work, since tests are showing that its costs for new work would exceed the cost of an original 8 inch wall.

Re-nu-veneer can open new markets

Calamity-Proof Construction

The clay products industry now has under testing methods of construction that no other competing material can match. There are construction designs and methods that can build houses to resist the awesome forces of tornadoes, earthquakes, hurricanes and even the atomic-bomb blast.

Weather-Proof, Bomb-Proof Construction

Based on the SCPRF tests at Coal City and the more recent Nevada A-bomb tests, houses have been designed that can offer as complete protection as is reasonably possible against catastrophe caused by weather or by man's bombs.

Using construction methods already thoroughly tested, such as RBM, SCR brick and others, SCPRF has designed a house with several floor plans to offer protection at all times. The same principles can be applied to schools, office buildings or to civic centers to serve as emergency shelters for the public.

These structures, aside from their strength and protection, also offer the public contemporary design and beauty at costs well in line with costs of current conventional designs.

The combination of the results of the tests and the ensuing design ideas have resulted in one of the greatest possibilities for public service that the clay products industry has had in many years. In this development is a product use that no other competing material has.

Pre-Fabricated Partitions

Prefabricated partitions are also in the laboratory practicality testing stage.

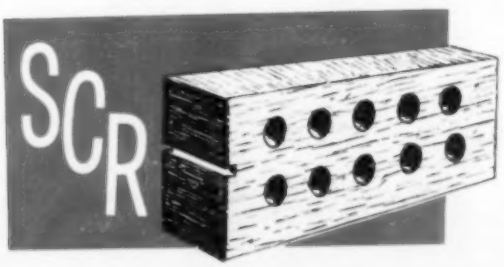
It's expedient in any type of construction to set up partitions in homes or office buildings quickly —partitions which can carry all utility requirements. It is also important to be able to decorate them directly without the need for lathing or furring.

Meeting these needs are partition units which can be supplied in the future by our industry, as developed by SCPRF in recent years. These units are composed of 12 x 12 fll 4" tiles banded and cemented (prefabricated) to form a floor-to-ceiling unit.

To install these units, the contractor needs only to tack them top and bottom in a manner similar to the panels. Chases in the tile will hold the wiring and piping necessary. For decorating, these tiles can be plastered directly or covered with glazed and unglazed units.

These units will offer several advantages to today's builder: strength, acoustical qualities, additional fire-proofing, fine appearance, economy and speed in construction.

SCR Brick Can Open New Markets



The SCR brick, which is now available everywhere, has by no means reached its full potential of usefulness and profit.

SCR brick is a product that adapts easily to present manufacturing methods; one that has all the quality and advantage of conventional brick; a product that can easily lead the way today to greater production and profit, to brand new markets, to much wider use of clay products in all construction.

SCR brick has an extensive range of possibility for all construction. It can be used to compete directly with other low cost housing materials and should sell better than any because of its eternal quality.

SCR brick can promote wider use of clay products in building because of the additional amount of clay used, because of faster construction, and because it's a unit that is complete in itself.

SCR brick can be used in the house or in the larger structure with equal success.

It's easily proved, as will be shown in a later issue, that by the adopting of SCR brick today, our industry can vastly increase the amounts of clay products used, and bring into the industry nearly $100 million a year more.

Reinforced and Pre-Stressed Beams

For almost 25 years, certain manufacturers have been supplying prefabricated floor and ceiling tile beams up to 30′ in length that are reinforced and set in place with a crane.

These beams can be used side by side or with a span tile between beams.

Reinforced Beams

Much more common in use in Europe than in America, design and manufacturing methods have been completely worked out and proven in many installations.

A wide-open possibility for clay product sales, floor and ceiling beams of tile offer the advantages of strength, sound-proofing, fire-proofing, durability and ease of installation.

The past success of pre-stressing is not secret. And the tile industry is not neglecting application of these principles to tile units.

A large structure has been built in the Northwest, proving the adaptability of pre-stressing to tile. The structure, it's proved, withstands the entire load of the roof and is 30% lighter than a conventional roof system.

Pre-Stressed Beams

In the matter of cost, it can cost up to 20% less than use of conventional methods.

These pre-stressed clay tile units are applicable to any type of construction, even the heaviest industrial type.

The Problems We'll Face-- And How To Solve Them

We'll need more manufacturing facilities; better and larger dealer-distributor arrangements; more promotion and advertising;

It has been shown that the clay products industry today, with its standard bread and butter brick and tile and products of research, has the products necessary to full development and growth. Still more products are on the way, fulfilling such vital needs as lighter weight, still more color, different product shapes, and more.

With a satisfactory product, and a favorable economy, then come the merchandising and mechanical problems to be met in achieving the goal.

The great chasm between initial idea and production use must be spanned. Related are problems and needs in manufacturing facilities, distribution outlets, promotion, advertising, more bricklayers, educated designers and builders, and others. Let's take them one at a time.

Manufacturing Facilities Far Short

Today's combined manufacturing capacity for the industry can be as much as nearly 1 billion brick equivalents. It is obvious, therefore, that any expansion of use and demand to achieve the goal would mean a necessity for more plants and, more particularly, the expansion of present plants.

The expansion would have to be selective. To make panels, beams, SCR brick, lightweight and such, in addition to standard items, would mean careful planning and building of facilities to conform to the products to be made.

It may be that present production could be speeded somewhat by eliminating some production problems, by pre-firing (using lightweight material additions) and by working more than one shift in forming.

Under the proposed program, the industry will need almost once again its present capacity.

The manufacturer must be fully familiar with all developments in products, their advantages and purposes. He must be alert to ways to improve his efficiency in all ways; to keep up with technological changes, particularly in equipment; to be aware of any means possible to improve and expand both present and future production.

Distribution Is Lacking

To dispose of additional billions of brick equivalents will take a much vaster and more complex organization at the use end.

The flow of materials must fan out like the water supply of a great city. The greatest, most concentrated flow of goods is at the factory, the hub of the system. Great quantities pour out of production to serve centers of demand. From these, distributors and dealers must supply the needs of their customers.

The job of distribution will become more complex as more products and variations of lines come. As more volume and more intricate product lines become available, many more men will be needed to sell, teach and deliver.

Promotion Will Intensify

The products will have to be promoted intensively if competitive materials are to be held in their place. The promotion must be at least as vigorous as that of the strongest competitor.

Films, lectures, printed matter, shows, displays are all a part of vigorous promotion and education. At no time should clay products be out of sight or mind of every possible customer, present or future.

The Structural Clay Products Institute has performed a stellar job in promoting clay products up to the present time. Its only limitations have been the size of its budget and the relatively small percentage of the industry backing SCPI. With a more prosperous industry, a bigger industry, the membership of SCPI should grow, too, and its promotion.

It must be remembered that the Structural Clay Products Institute promotion endeavors cannot be the answer to all promotion. SCPI can make the cannon balls but they must be shot out of the cannons at plant level. Therefore, plant budgets for promotion should be greatly increased to back up what SCPI Washington is doing and will do on an expanded scale as the industry expands.

Advertising Is A Big Factor

If the goal is to be attained, advertising programs must be the strongest possible, and the best possible. Advertising must be directed to the entire building chain; dealer—architect—contractor—builder—consumer.

The intensity can vary from time to time but a constant pressure must be maintained in all directions all the time.

Brick specification and sale normally travels through a regular channel—from architect to con-

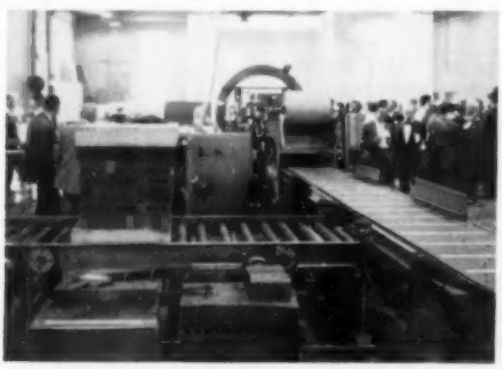
tractor to dealer to customer. It's somewhat like a series of swinging doors through which the brick must pass. To be finally put into the structure, the approval of brick must pass through each door. Advertising is the lubricant that makes all of these doors open easily. All of the doors must be constantly lubricated, because the brick must go through every door to reach the construction site.

How much advertising and promotion is enough? Whatever it takes to move and sell 21 billion brick equivalents.

Here again the Structural Clay Products Institute has done a fine job and will continue to do a better one, as bigger budgets are available. However, here again the fact must be emphasized that SCPI can do an all-over job only and budgets at the plant level must be increased considerably to back up the national job.

Bricklayers Are Short

Today's supply of bricklayers will adequately use up about 9 billion brick equivalents. Will the quantity of bricklayers have to be more than doubled? Hardly.



Research is steadily working to make the tasks of the bricklayer easier so that he can produce more. Larger and lighter units with better mortars, automatic brick delivery, quick mortar spreading, easier handling through packaging and products as yet undevised will reduce the need for vastly increased numbers of bricklayers. It's very possible that a 50% increase in their number could adequately handle the nearly doubled volume of clay products.

The entire program of increased productivity will make more work for the bricklayer. He will be busier than ever and in greater demand than ever.

Educating the Designer, Builder

The need for disseminating know-how in the use of clay products is sorely needed. Even today, with as simple a product as the SCR brick, the knowledge of its application to construction by the architect, contractor and builder is almost nonexistent.

How can this process of education be accomplished? It is said that a sale is composed of six steps: 1) contact with customer, 2) arousing of interest in the product, 3) creation of desire, 4) making of proposal to buy, 5) closing the order, and 6) keeping the customer sold.

Getting the building industry to use SCR brick or any clay product must go through the same steps. First, the initial contact must be made; then interest must be aroused; finally, the desire and purchase or approval.

The first three steps can be accomplished without manpower, through advertising. Steps 4 and 5 mean educating and convincing and can only be accomplished by man to man contact. Emissaries of the industry must call on architects, contractors and builders and teach them how to use clay products and to expound their benefits.

Step 6 again can be accomplished by constant advertising. You must tell your story over and over, and not stop after the sale is made. You must keep the customer sold.

All of this will take office calls, classes, lectures, literature, demonstrations, displays and any device at hand to use in the personal contact.

Which of these problems is most important? Which should take precedence: manufacturing, distributing, application or selling?

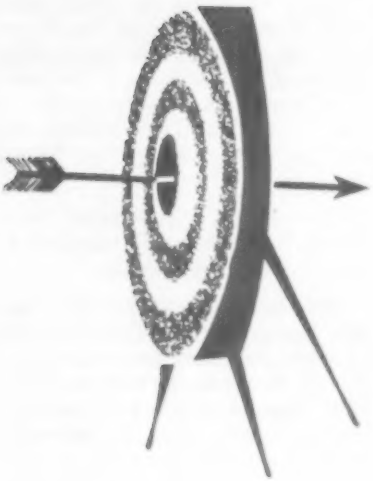
That can only be answered in the old story of the chicken and the egg—which came first?

Actually, it will all come simultaneously. As the need and desire develop, the product will come, the bricklayer will be there.

But it will take work, planning, coordinating and thought, by a group that knows how and is dedicated to this purpose.

The Structural Clay Products Institute has conducted two training programs which have laid the background for greater education. It has gone about the country with a staff talking to brick salesmen, teaching them how to approach architects and builders. It has a training program in Washington where engineers are trained to service architects and builders with technical information. The plan again needs grass roots support and following up the ideas and plans and teachings of SCPI, the central organization.

Our Goal For The Future



Where will our market be for the various products; our industry will still be based on our bread-and-butter product line, brick and tile

In what areas will the market lie? Which products will sell the most in early stages? What new products will boom in sales years from now? These questions can only be answered by time, both time of the coming months and of years some distance away.

For the moment, we would like to suggest these figures as the goal for the individual products to meet under this program:

	Billion Equivalents		Billion Equivalents
Housing	6	Partitions	2
SCR Brick	2	Pre-Stressed Beams	1
Panels	2	Reinforced Beams	1
Large Structures	4		
Re-nu-veneer	2		

This, then is our goal for 10 years from now, or sooner if at all possible. It will work, with heavy doses of thought, time, effort and money . . . on the part of everyone of us in the industry. Whether or not this goal can come true depends in large part on each individual manufacturer and the activity of his particular area.

Editor's Note: The editor wishes to emphasize that the backbone of this entire program is the standard product made by the industry: brick and tile. Probably better than half of the proposed goal will possibly be from standard products—and that compared with today's market is a doubling of the use of standard brick and tile.

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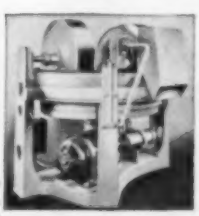

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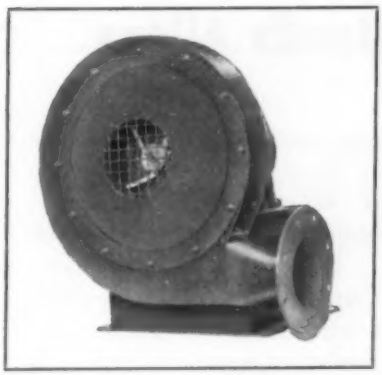
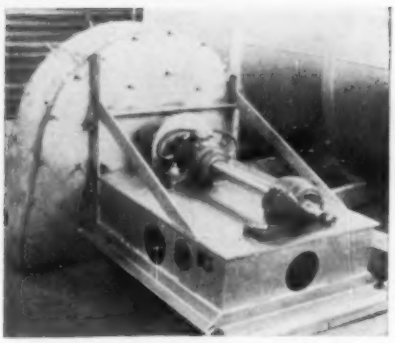


Robinson Turbine Type CS Pressure Blower (Bulletin No. 1100).



Special AE-6-BB exhauster for High Temperature Recirculating Systems.

Robinson Sulkey Type Cooling Fan (Bulletin No. 8001).

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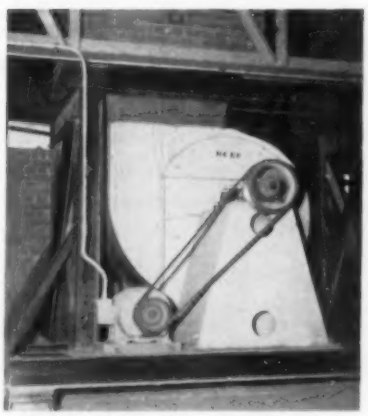

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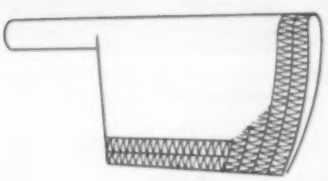
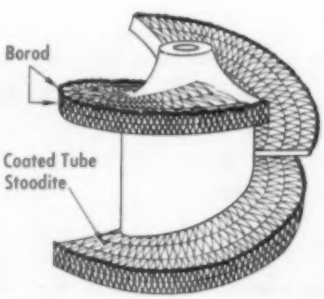


KNIVES
Coated Tube Stoodite or Borod (Gas or Electric)



AUGERS
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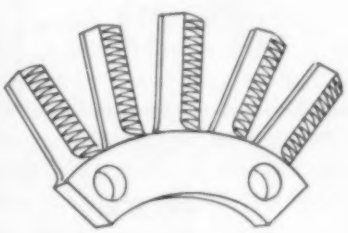

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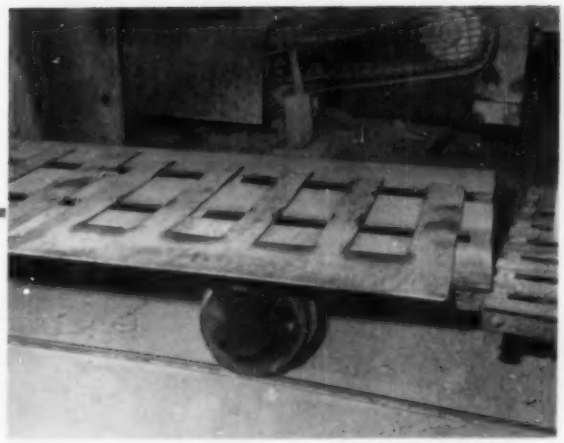
Third in a series: A discussion of the effect of mineral content on color; the colors and problems resulting from varying iron content



Columbia uses this guide in car setting.

How Columbia B&T Combines Clays for Colors

by
William R. Powell
Vice President
Columbia Brick & Tile Co.

A typical chemical analysis of the Cheltenham plastic fire clay from the Columbia Brick and Tile Company pit is as follows:

Ignition Loss	12.00%
Silica (SiO_2)	56.79%
Alumina (Al_2O_3)	24.02%
Iron Oxide (Fe_2O_3)	1.92%
Titania (TiO_2)	1.28%
Lime (CaO)	1.32%
Magnesia (MgO)	0.56%
Alkalies ($Na_2O + K_2O$)	2.18%
Total	100.07%

The clay mineral present is the characteristic kaolinitic fire clay mineral with much illite present, as evidenced by many high bi-refringence areas.

In the unoxidized portions of the Cheltenham strata, which is still protected by overlying thin strata of Loutre limestone, the iron is present chiefly as pyrite ($Fe S_2$) and illite. These clays burn off white in color, with small black specks when the pyrite is present, at cone 6.

This clay is used in the manufacture of greys with the addition of manganese, and very light buff colors with the addition of ten per cent of sandy Lagonda shale and ten per cent of very fine grained Pacific white sand.

Iron Content

The most important color producing element in this clay is the iron content which may vary from 1.75 to 3.50% in the upper Cheltenham strata.

THIRD IN A SERIES

This is the third and final article of a series of articles on clays and colors. The first article appeared in August, page 50; the second in September, page 52.

William R. Powell, of Columbia Brick & Tile, of Columbia, Mo., holds a B.S. Degree in Ceramic Engineering; another B.S. in Metallurgical Engineering.

In his professional career, Powell has worked for A. P. Green Fire Brick Co., including service as assistant to the research director; as plant manager at Big Savage Refractories; as superintendent at Pyro Refractories; for twelve years as general plant superintendent at Mexico Refractories Co.; and most recently as co-owner and vice-president at the Columbia operation.

The iron is present as pyrite (FeS_2); anhydrous ferric oxide (Fe_2O_3) or hematite; hydrous ferric oxide limonite or brown ore group ($mFe_2O_3 \cdot nH_2O$); hydrous iron sulphates copiapite ($2\ Fe_2O_3 \cdot 5\ SO_3 \cdot 18 \pm H_2O$) and siderotilite, in addition to its presence in the mineral illite.

Outcrops and thinly covered areas of this clay show some of the reddish stains of hematite, but most prominent are the yellow and brownish colors of the limonite group and the greenish to greenish yellow of the hydrous iron sulphates. The greenish cast of the clay face can be better observed after a rain in the bright sunlight. Much experience is necessary to distinguish these areas from the clearer grey clay.

Throughout these oxidized areas of the upper Cheltenham, there is much evidence of selenite or calcium sulphate which is undoubtedly a secondary mineral formed during the oxidation of pyrite. The sulphuric acid formed acting upon calcite or lime rich waters produces gypsum ($Ca SO_4 \cdot 2\ H_2O$).

These clays burned under a normal oxidizing atmosphere from cone 3 to cone 6 produce colors varying from light

(Continued on next page)

All Columbia kilns are loaded by fork truck.

peach to yellow to off-white. It is normally very plastic and hence needs to be used with a small percentage of calcined clay or some material of lower plasticity to produce a good brick.

Production of Yellows and Browns

Upper Cheltenham fire clays with yellowish and brown limonite stain are selected together with grey clay having a greenish cast (this is not to be confused with a distinct green clay such as occurs at times at the top of the Cheltenham in V-shaped stringers, belonging to the Loutre formation—this material burns red to deep brown at cone 5). These clays are ground and mixed with 10 per cent to 50 per cent finely ground grey Lagonda shale. These combinations produce a variation in color, ranging from light yellow to dark brown when fired from cone 3 to cone 6. At cone 3 these brick are matured and present soft, pastel shades tending toward cream, as the temperature is increased up to cone 6 the colors pass from a yellowish-cream through tan to brown.

Color Control Factors

1st. The amount of yellowish and brownish stained limonite clay in the base fire clay.

2nd. The intensity of green cast in the grey clay.

3rd. The amount of Lagonda shale used in the mix which tends to darken the color toward brown.

4th. The intensity of firing (from cone 3 to cone 6).

5th. Fineness of grind. The fire clay slakes easily in pugging, so fine grinding is least important on this material but the shale should be ground 10 mesh or finer.

Pastel Pinks and Pinkish Shades

Considerable progress has been made in the control of iron in the production of these colors, since it is the chief color producing material in this clay. The essential factors effecting the color produced, depends to a considerable extent upon the fineness of the iron material present and some means of controlling its oxidation.

Most everyone associated with the production of clay products is familiar with black-coring and has had the experience of staining between tightly set brick, if not actual coring of the brick itself. While carbonaceous materials may be a contributing factor, the real problem is chiefly iron and control of its oxidation in most cases.

In general, iron oxides and iron sulphides tend to produce brown and black colors and are considered to be more or less objectionable. The larger the iron particle, the more objectionable it becomes.

Fortunately, the fire clays of this deposit of Cheltenham possess large areas of the clay with extremely fine disseminated iron minerals present.

Iron may produce any color from red, through yellow and green to bright blue, according to the amounts of ferric and ferrous iron present. Under oxidizing conditions, yellow colors will be produced as an equilibrium is reached between the ferrous and ferric iron. If reducing conditions are maintained so as to secure ferrous iron, a blue color will result. A combination of the two ferrous and ferric irons, produce a yellow to greenish-yellow color.

It is true that these distinct colors are somewhat masked by the opaqueness of the fired alumino-silicates, but they are definitely present and are evidence that an equilibrium relationship exists between the ferric and ferrous iron for a particular set of firing conditions.

Many sets of draw trials have been taken from our kilns at temperatures listed below (the temperatures are probably not accurate closer than ± 100 degrees F. but serve to show color possibilities only).

Below 1200 degrees F.—grey color.

1200 to 1800 degrees F.—intensifying pink color with increasing temperature.

1800 to 1950 degrees F.—pink color decreases, replaced by yellow.

1950 to 2050 degrees F.—yellow color predominates.

2050 to 2150 degrees F.—yellow gradually changes to the browns of the iron-alumino-silicates.

An attempt to disturb the ferric-ferrous equilibrium was made with nitrates in the form of ammonium nitrate, thirty-three and one-third per cent fertilizer. The nitrates have given many pink to pinkish amber colors over the past six to eight months. They serve a three-fold purpose:

1. Oxidation of organic matter present.
2. Disturb the ferric-ferrous equilibrium, causing a higher percentage of ferric iron coloring through oxidation.
3. Elimination of staining or coring, between flat set brick.

Two other minerals are undoubtedly contributing factors in this unusual color producing phenomena, i.e.: a high sulphate content ($CaSO_4 \cdot 2H_2O$ and hydrous iron sulphates) of this particular Cheltenham clay and the addition of a fairly high percentage of barium carbonate (35#/M brick) to control the scumming tendencies.

Greys and Light Colored Buff

When grey brick are made, the best grades of middle-Cheltenham grey fire clay is selected from the unoxidized areas. Small amounts of iron pyrite which sometimes occur in this clay are not objectionable, as it produces small, black specks when finely ground. Ten percent of fine, white Pacific sand is added to the above clay, together with thirty to forty pounds of 60-mesh manganese per 1000 brick equivalents. This mixture fired to cone 6 produces a light to medium grey brick.

Very light colored buff brick are made, using this unoxidized grey clay mixed with seven and one half per cent of very sandy Lagonda shale and ten per cent fine grind white Pacific sand.

In conclusion, the variety of colors which can be produced from the Cheltenham fire clays and fire clay-shale mixtures, are attributable to the following factors:

a. The presence of finely disseminated iron minerals in sufficient amounts.

b. The presence of a comparatively high sulphate content as selenite and as hydrous iron sulphates.

c. Careful selection and blending of the clays.

d. The use of various firing techniques.

e. The use of certain chemicals and additives to produce and control colors.

Seals And Their Installation

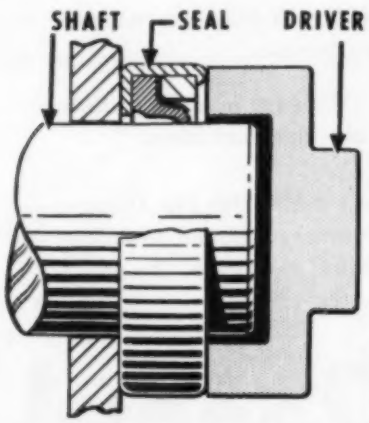
By
J. B. Sinclair
Service Department
Caterpillar Tractor Co.

Very frequently, the parts doing a big job are small in size and therefore, are seemingly insignificant. When compared to the size and cost of a crankshaft, the size and cost of the seal at the forward end of the crankshaft is negligible. Yet, that small seal, if not installed correctly or replaced shortly after a leak occurs, can permit serious damage to the engine.

A felt seal is ordinarily used where the principal requirement of the seal is preventing the entry of dust and the retention of oil or grease is not a requirement. When installing a felt seal, impregnate the seal with lubricating oil to protect the seal from overheating and wear. If the installation requires that the seal be split, the cut should be made at an angle.

Cork Seals

Cork seals are sometimes used instead of felt seals. While cork seals give good protection at temperatures up to 150° F., they are not recommended in applications where they will be exposed to acids, alkalies or high pressure.

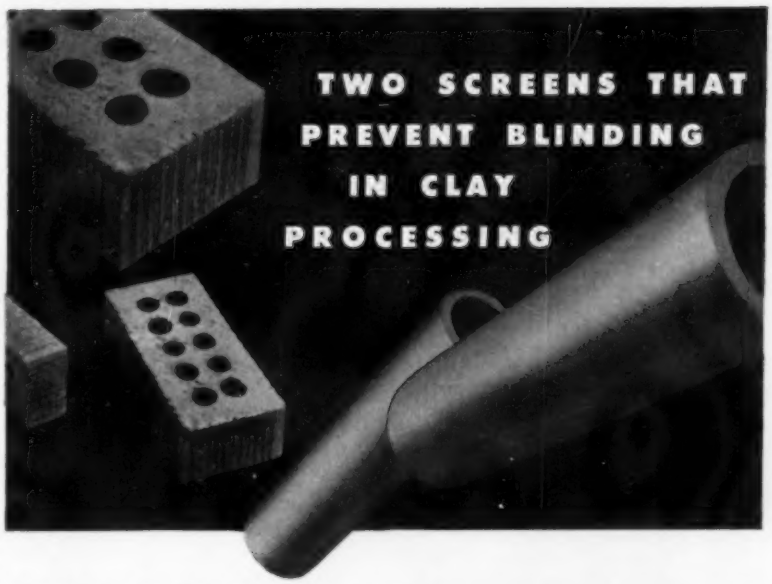


Cork, when used against a solid backing such as on face type seals, effectively retains grease in a compartment and excludes water and dirt. When installing a face type seal with a cork face, coat the cork face with graphite grease.

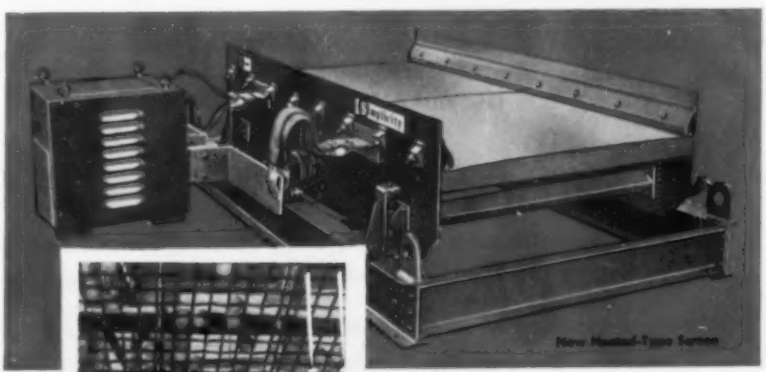
Leather and Rubber

Leather and rubber are widely used sealing materials. The most common usage is in lip type seals. However, leather is being replaced by synthetic

(Continued on page 94)



SIMPLICITY'S NEW HEATED-TYPE AND BALL-TYPE



Underneath view of Ball Tray Deck

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How Ochs Makes Their Hundred Pack

After experiments, Minnesota plant settles on 100-Pack as best for them; enthusiasm of contractors best proof of success of packaging operation

Probably the best proof of the success of packaging as done by A. C. Och's Brick & Tile is the many letters received from contractors using their brick. Every one of the letters compliments the Springfield, Minn., company on the great ease of handling that packaged brick affords them.

Och's has been packaging some 55% of their output for some five years now.

The packaging operation started in 1952 when Ollie Bishop, the plant superintendent, contacted Signode Steel Strapping engineers to work out the best method of packaging for Och's. The original intention was to package the brick by machine method, but it was eventually decided to drop the machine approach. They then evolved the method of packaging brick in a 100-pack.

Large Order

At about this time, Och's got an order for a large job in Minneapolis. They decided that this would be a good time to test a contractor's reaction to packaged brick. They sent one complete carload of the 100-pack plus a Flink truck, all on approval at Och's expense.

The packaged brick clicked immediately with the contractor, and he promptly ordered all the rest of the brick in 100-packs. That's been essentially the pattern ever since.

Either a truckload or a carload of packaged brick is sent to a contractor with no charge for the packing. Almost invariably the 100-pack is specified on future orders.

To further prove the advantage of strapping, Och's tells of one contractor who straps loads of loose brick that he receives from companies other than Ochs. From experience with Och's strapped packs, this contractor has found this extra effort on unpackaged brick to be worth the time and money in handling savings on the job site.

Claims for damage in the carloads of strapped brick shipped by Ochs have been almost nil in the past five years. With 14,000 to 15,000 brick per car, of about 450 such loads shipped since packaging was started, only one claim for damage has been made—proof of the fact that savings in using packaging for shipping go beyond on-site and handling.

Tried Various Packs

Och's has experimented with various sizes of packs. They've found that in their experience the 100-pack is the most versatile size. With the 500-pack, they believe there's too much of a tendency for brick to loosen before the package is delivered. Also, they feel that the 500 is more cumbersome to handle on the job than the smaller 100-packs.

As for smaller packs, Och's feels that the cost of packaging goes up too high. The 100-pack, Och's is convinced, is not only easy to handle around the plant and at the job site, but is a very easy package to make up.

Turning out the 100-pack at Ochs is done on a regular production line basis, with 8 men working full time at packaging. Six of these men cube the brick into the package; one man straps; and one removes the brick pack with a Flink buggy. The last man subsequently also transports three or four of the packs to the loading area, using a fork truck.

Mingling and Sorting

The brick are usually sorted in quality grades before they're brought to the pack assembly line. Mingling of shades for the various orders is done right at the packaging line.

(Continued on next page)

OCH'S PACK Continued

The package is made up, basically, of 7 courses of 14 brick each, except for the two courses where the voids are provided for handling purposes. On these latter courses, two brick are left out for each of the voids, and immediately above the voids, three brick are laid crosswise for support.

The bottom two and top two courses of brick have a light-cardboard spacer added to provide firmness and to keep the brick from sliding out of the package. Seven brick are laid on their side for the top course, and the pack is then strapped.

Jigs Used

The brick are laid up in specially made plywood jigs, two of which are placed back to back at each cubing station. On the left edge of the jig a 2½" plywood corner is built up for a guide in cubing and straightening the package.

A groove is provided at the bottom of the jig to allow the strap to pass under the package. The jig is solidly supported in the rear by three-inch flange plates installed at an approximate 30-60 degree angle arrangement. A simple storage spot is built into the back of each jig with three strips of steel to hold the cardboard spacers.

As the strap is being swung around the package, strips of cardboard are placed at the corners to allow the strap to be drawn tighter. After the strap and corner pieces of cardboard are placed, and just before the straps are given final tightening, the man who's strapping shakes the pack lightly to be sure all brick are firmly in place.

To Next Cube

The strapper then moves to the next cube pack to continue the strapping job. Men who are doing the cubing keep moving in rotation down the packaging line, mingling according to order and placing the cardboard strips in their proper places.

The packaged brick is taken to a temporary storage by the Flink, where the lift truck then removes the packages to truck, railroad car or storage. Generally very little stock in strapped form is kept in the yard.

Some 500-packs are strapped also, and for these as well as the 100's, ⅝" by .023 Signode strapping is used. For unitizing the load in the railroad car, 1¼" by .035 strap is used.

Carloading consists of six floating loads of brick, with allowance for a completely open doorway for lift truck operation. Before the 100's are brought into the car, a length of the 1¼" strapping is laid on the floor in sufficient length to encircle the complete row of packages after they've been filled out to the doorway.

Each of the six rows of brick are handled in the same fashion. When they're all loaded, the strap is brought around the entire row and fastened.

While the packs are being loaded, the large strap is temporarily hooked to the inside wall at the end of the car. The entire load is bulkheaded with three of the 1¼" straps across each of the three rows of brick and fastened to the sides and inside walls of the car.

Essentially, the entire packaged load consists of two floating loads. Even when Och's has an order for a load of loose brick, they use steel strapping to reduce the amount of damaging movement.

With the new increased production facilities put in at Och's (see May issue, page 48), customer acceptance of packaged brick is bound to increase.

Manhour Savings

The Och's operators have increased their brick handling efficiency greatly. Where it formerly took six men some seven hours to load an equivalent amount of brick on a railroad car, now one man using a fork truck can load in 30 minutes, not included car-strapping time.

Och's has succeeded in selling the idea of their packaging to customers to such an extent that the cost of packaging is carried entirely by the customer.

Ollie Bishop, who had much to do with developing the Ochs packaging methods, feels that packaging has a great future, and that much more can be done to increase the ease of handling brick.

Completed 100-Pack is wheeled away to storage on Flink truck. Little strapped stock is kept in storage area.

Gauge here checks structural tile piece; instrument also has guide to check the square of the tile.

Ole Petterson of Kraftile checks the length of a dry piece of structural tile with dial gauge.

How Kraftile Developed Quality Control

Company designed and built special equipment to use in statistical quality control program; how the company set-up production specification.

In March 1956, Kraftile Company, Niles, Calif., decided to establish a full time program of statistical quality control. In its present phase, it is used to locate weaknesses in their production process, to eliminate such items as over and under sized ware, warpage, chipped ware, cracks, etc. This program is under the direction of Ole A. Pettersen, Industrial Engineer.

The statistical quality control program was designed to check production ware and determine if these fall within an average established pattern. These control functions are made during the various production phases for the purpose of controlling the different production processes from getting out of hand prior to the product reaching the finished ware inspection department.

Specifications Established

At the present time specifications have been established for the dry ware and fired ware. At intervals, several pieces of ware can be taken from the cutting machine and dried in a test drier.

These pieces are then used to determine whether the ware being produced are under or over sized. This eliminates making extended production runs that are unsatisfactory for further processing.

Statistical tests were first made to establish the production specifications which are used to determine whether the dry ware should be classified as satisfactory or either under or over sized ware. The specifications for the dry ware are based on the relationship between satisfactory fired ware and the dry ware.

A special adaptor was placed on a standard Federal Dial Gauge to make an instrument for measuring the length and course height of the dry tile. This instrument is accurate to 1/100 of an inch. When the average size begins to drift, then a statistical test is run on the dry and fired ware to determine how far the size has varied from the desired standard.

These tests will show whether or not a body mix should be adjusted and to what extent the body mix needs adjusting.

Four Special Instruments

Four special electrical surface gauge instruments were designed and built to establish whether the fired glazed tile would meet desired warp specifications, on a GO, NO-GO basis. A machined surface plate was used which has a number of electrical limit switches protruding through the surface plate so that the difference between the contact point of the switch and the surface plate is equal to the warpage specification for the tile.

The electrical limit switches are connected in series so that a bulb will be illuminated when all the electrical switches are engaged, meaning that the tile meets specifications.

One of the four electrical surface gauge instruments was built for Kraftile Veneer which is a nominal 12 by 16 inches in size. Every piece of Veneer is checked on this instrument as the ware is unloaded from the kiln car.

Other Gauges

The other three smaller electrical surface gauges are used for the glazed structural tile units whenever the need arises.

The reason for establishing this type of program was to raise the quality of the ware and to reduce losses from unsatisfactory ware. The final control function is the statistical control applied to the ware after normal plant inspection to prevent any possible inferior ware leaving the plant.

The appointment of Norman G. Bull as sales manager, Chemical Products Div., has been announced by Kimberly-Clark Corp., Neenah, Wis. Bull, formerly assistant sales manager, Technical Papers Division, assumed his new position September 3. He will be responsible for the national sale of a new Kimberly-Clark product, Additive "A," a clay treatment designal to improve the manufacture of structural clay products.

Clemson Meet Discusses Plant of Future

ACS group discusses products, plants, materials and equipment of the future; talks cover topics ranging from today's panels to tomorrow's atomic power.

"The Structural Clay Plant of Tomorrow" was the theme of the fall meeting held September 5th to 7th by the Structural Clay Products Division of the American Ceramic Society. The meeting, headquartered at the Clemson House on the Clemson College Campus, was attended by 196 persons who heard nine speakers outline the future possibilities of the industry as it is affected by raw materials, methods and markets. A quarter of the meeting was spent in panel discussions on various problems of Structural Clay Product Plants.

The first day of the meeting was devoted to plant visits. Approximately 75 people visited the Laurens Glass Works at Laurens, S. C. and the Owens-Corning Plant at Anderson, S. C. The purpose of the tour was to illustrate the lengths to which some industries have gone in the development of automatic methods.

The Lauren Glass Works is a maker of beverage bottles. They have a two color ceramic labeling line that is completely automatic and only requires manual loading and unloading.

The Owens-Corning plant produces glass fibers for textiles and similar uses. One of features of this installation was the automatic batching equipment that has been installed. The drawing of molten glass to form strands was of great interest to the people who made the trip. The party returned to Clemson in time to attend a fish fry and barbecue at the Country Club.

The technical sessions were held in the Clemson Ceramics Department's, Olin Hall. This facility is completely equipped with all types of laboratory equipment, crushing and grinding machines, presses, extrusion machines, periodic kilns, a car tunnel kiln, rotary kiln and a small tunnel kiln in which a wire belt carried the ware through. The belt kiln was put in operation for those attending the meeting and brick supplied by them were glazed in a short time. The facilities offered to the student at Clemson College impressed many of the visitors.

The morning session on Friday, Sept. 6th was called to order by John M. Dickey, Jr. of the Hanley Co. of Summerville, Pa. He introduced Paul V. Johnson who spoke on the subject of New Designs for Structural Clay Products.

Johnson stated that new designs for clay products could be divided into three parts: new products, new uses for old products, and new methods of using old products. All of these approaches could be expected to yield worthwhile results and all of them should be examined. Johnson showed slides taken at Geneva, Ill. of the panel house developed by the Struc-

Gil Robinson of Clemson shows belt tunnel kiln at left.

tural Clay Products Research Foundation. He offered this as an example of using new methods to secure more economical use of an old product. It was stated that the 2½" walls of the panel house were load bearing, were installed in record time and were able to develop resistances much greater than would be needed.

Harlan E. McClure, Head, Department of Architecture, Clemson College, offered a paper entitled "The Types and Application of Structural Clay Products of the Future." McClure listed the use of clay products in the past and the present. To illustrate his points he used slides taken in Europe and the United States.

He stated that masonry should allow the architect to express the function and form freely. He predicted that future designers would need new shapes, more color and an altered set of physical characteristics in the material that they used.

New Raw Materials

The head of the Clemson College Ceramic Department, Gilbert C. Robinson, spoke on "Tomorrow's Raw Materials." Reference was made to the fact that many problems faced by the industry today are imposed by the raw materials with which the industry works. Robinson suggested that upgrading and improving raw materials might prove to be a more profitable approach than the use of more sophisticated methods and techniques. He stated that in any event better raw materials would allow the industry to produce products which are now impossible of economical production.

The principle problems as he saw them were listed by Robinson as carbon content, slow drying and shrinkage. He suggested that each of these problems be attacked separately and that this would result in a material in which an agent would be used for plasticity, with a dry state cement, a fired state cement and aggregate combined to meet each condition. He further maintained that each portion could be supplied with a separate component or that in some cases one component could furnish two or more of the qualities desired.

Robinson closed his talk by listing materials that could be used to supply the qualities needed to formulate the ideal fired clay body and predicted that the future would see production of bigger units designed for particular uses on an economical basis.

Particle Size Control

In a paper prepared by Fred C. Bond of Allis-Chalmers, and delivered in his absence by Wray A. Shockly, the theory of tumbling mills was presented. If in the future plant, more accurate control of particle size and particle size distribution is required, methods are available to control these variables. Additionally the shape of the particle can be influenced by the proper selection of equipment and processes.

The factors involved in the selection of ball and rod mills along with the choice of wet or dry grinding was a highlight of the paper.

Forming Methods Outlined

A list of possible forming methods was presented to the meeting by J. Otis Everhart, head of the Ceramic Department at Ohio State University. The paper offered his opinion as to the potential of each forming method. He mentioned that improvements could and are being made in the extrusion process.

He said that auger and die were both subject to further refinement to the benefit of the manufacturer.

Among methods brought out were, vibratory forming, casting and ramming. According to Everhart, vibration seems to work best on less plastic materials and less well on thicker shapes. Casting, wet and molten, was subject to serious problems that might prevent widespread use. Everhart noted that ramming appeared to work well on simple shapes.

Blasting onto forms has been successfully used in the past and such procedures might prove to be of increasing value. The speaker brought to the attention of the meeting the highly altered characteristics of ware produced in ultra-high pressure dry presses. Low absorption and minimum shrinkage were secured but only at the expense of high die wear and slow production. Other pressure methods suggested were hydrostatic pressure and mechanical tamping. An interesting development was work undertaken at Ohio State University which resulted in a patent being issued for forming large sizes of sewer pipe by winding an extruded ribbon onto a mandril.

Improved Machine Room Techniques

J. C. Steele, Jr. of Statesville, S. C., presented to the meeting principles to be followed in the improvement of machine room methods. Of primary consideration in the automation of the machine room is the supplying of uniform raw material to the pug mill. The speaker indicated the problems introduced by non-uniform material and stated that such problems were best solved in the processes preceding the machine room.

Steele noted that uniform feeds were required for the production of quality ware and devices are at hand that will feed uniformly. Different

(Continued on next page)

William MacGuire discusses control instruments at Clemson meet.

Z. U. Kogan, speaking on creative thinking methods.

Mrs. C. W. Isenhour talking things over with Mrs. & Mr. A. D. Teague.

PLANT OF TOMORROW

(Continued)

clays require different types of feeders. He pointed to the development of high water pressures at the pug mill delivered through an accurate throttle valve as an advance in the industry. He reviewed the automatic water control system.

The development of vacuum pugging was hailed as an advance which would see great application throughout the industry in the future. The improvement of extrusion machines to withstand higher loads with heavier sections and to give longer wear with the use of alloys was brought out by Steele. Such refinements will continue.

The advantages of time and motion study as applied to off-bearing were noted and the speaker stated that this had delayed the appearance of a brick hacking machine. Other problems faced by a potential builder of a hacking machine were limited market potential, delicate material and non-uniform car sizes, brick sizes and setting patterns.

Atomic Energy Lags

The Chairman of the afternoon meeting was Wayne E. Brownell. He introduced L. M. Doney as the first speaker. Doney is the head of the Ceramic Laboratory at Oak Ridge, Tenn., and presented a paper entitled "Energy Sources of Possible Interest to the Clay Products Industry." The speaker indicated that some time will lapse before energy from the atom will be cheap enough to displace more conventional sources. In the firing of clay products this energy will be received in the form of electricity as no other method of transfer appears probable.

Doney was followed by William J. Macguire of Macguire Instrument Co. The possibility of using strain gauges, sonic absorption, electrical conductivity and gamma ray absorption for control of ceramic processes was the topic of this speaker. Several ways were suggested by which these elements of control could be utilized.

Meeting Forms Panels

Those attending the session were divided into seven panels for discussion of:

- Products, under direction of Paul V. Johnson
- Raw Materials, led by L. R. Whitaker
- Crushing and Grinding, led by George Seanor
- Forming, directed by Elmer Ligon
- Drying and Firing, with James T. Robson in charge
- Automatic Hacking, with Dwight B. Hendryx
- Automation, under the combined leadership of Frank Barch and Sherwood Patek.

The different groups were organized to sum up problems under its heading

Paul Johnson of SCPRF tells about panels for construction.

for the consideration of all those attending the meeting.

The last session of the meeting was held Saturday morning and was highlighted with a presentation by Z. U. Kogan of the Creative Thinking Institute, Chicago, Illinois. His paper, "A Method in Creative Thinking," compared the thinking processes with physical processes and maintained that by following proper thought patterns creative thinking can be induced and problems solved in all lines of endeavor with maximum efficiency.

L. M. Doney of Oak Ridge talks atomics.

"Quantity of equipment purchased by Brick and Clay Products Plants next to Phenomenal"

***says leading distributor of industrial equipment and supplies,* Mr. R. P. Christian, President and General Manager of the Canton Supply Company, Canton, Ohio.**

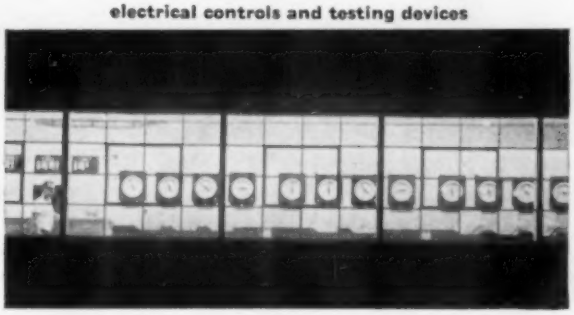
Mr. Christian has sold equipment and supplies to brick and clay products plants for 40 years. He has watched these plants change from simple, one-man operations to vast activities that require huge quantities of excavating, materials handling and processing equipment . . . and materials to provide color, strength and finish to brick, tile, refractories and other clay products.

excavating and materials handling equipment . . . chain and belt driven conveyor systems . . .

mixers, grinders . . .

fans, ventilating systems . . .

electrical controls and testing devices



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NEWS OF REFRACTORIES

Raugh to Head Porter's Refractories Division

James P. Raugh, has been named Vice President and General Manager of the Refractories Division, H. K. Porter Company, Inc., according to announcement by C. L. Holbert, Porter's President. Raugh previously has been Vice President of Operations for General Refractories Co.

Raugh, a graduate of the Naval Academy at Annapolis, joined General in 1929 as a salesman, became General Sales Manager, General Works Manager and finally Vice President—Operations. In 1953 he became President of Fleming, Raugh, Inc., a Philadelphia construction firm and simultaneously Vice President of Frank Samuel & Co., Inc., trading and manufacturing concern in that same city.

Porter's Refractories Division was formed earlier this year by combining its Laclede-Christy and McLain Fire Brick Divisions and with recently acquired Mullite Refractories Company.

Ironton Fire Brick Making 70% Alumina Brick

Ironton AL-70, a new 70% alumina brick, is now being made by Ironton (Ohio) Fire Brick Co., according to a recent announcement.

The P.C.E. value of the AL-70 is reported to be cone 38, making it suitable for severe temperature locations in various types of furnaces. The announcement notes that ceramic plants can obtain the new product in 9" straights and series brick as well as in

special shapes. The plant has facilities for making molds from customers blue prints.

Ironton announced at the same time that E. F. Myers, board chairman and president, and Mrs. Mabel G. Brace, vice president-treasurer, have moved to the general offices at Ironton. They were originally located at the Southern office in Jacksonville, Fla.

Schweinsberg Named H-W Ass't. Gen. Sales Mgr.

Harry S. Schweinsberg has been appointed assistant general sales manager of Harbison-Walker Refractories Co., Pittsburgh.

Sales manager of the company's Philadelphia district since 1948, he now will be headquartered in Pittsburgh. Schweinsberg has been with H-W since 1924.

Address Change For B&W Refractories-N.Y.

Announcement of a change in address of the New York district sales office of the Babcock & Wilcox Co. Refractories Div. has been made by division sales manager Mark Terman.

Formerly at 161 E. 42nd St., the office is now at 135 Cedar St., New York City.

Murray Refract. Files Tax Refund Suit

Murray Refractories Co. has filed suit in U. S. District Court, Salt Lake City, Utah, seeking some $162,700 from the federal government as refunds on income and excess profits taxes.

The company stated that it overpaid its taxes and failed to receive a deduction for depletion of silica products for the tax years from 1951 to 1953.

New Gladding, McBean Indian Hill Plant Operating

Thirty-five miles southeast of Sacramento, California, is the Gladding, McBean & Co. Indian Hill Plant, the first plant in the West to be built exclusively for the production of refractories specialties. This plant manufactures four general product lines including ground clays and grogs, refractory mortars used in laying firebrick, and refractory concretes and plastic firebrick for on-the-job construction of monolithic linings and structures.

The plant maintains a complete inventory of refractory specialties for shipment direct to consumers and distributors or to Gladding, McBean warehouses throughout the West.

Storage areas for crude raw materials cover 15 acres of the plant grounds. Modern metal buildings provide covered storage for 25,000 tons of raw materials. Conveying and loading systems for handling both crude and finished product shipments and extensive rail sidings have been constructed on the property.

In the 70 x 260 foot manufacturing building, which also contains warehousing facilities, is a modern grinding and screening plant consisting of three major circuits—a Raymond mill circuit for fine-ground and air-floated clays, a dry pan circuit for coarse-ground clays and refractory grain, and a porcelain-lined ball mill for fine-ground refractory grain. Also included are complete batching, mixing and packaging lines.

All products are packaged in distinctively identified containers. About 50 separately branded materials will be regularly warehoused at this plant. Bagged products range in weight from less than 10 lbs. to more than 100 lbs. per cubic foot and standard packages range from 25 to 100 lbs. as customer requirements dictate. Numerous types and sizes of drums and cartons are also utilized.

The new preparation equipment available at the Indian Hill Plant will facilitate the early introduction of additional plastics, ramming mixes, castables and ground clays. Already in the market development stage are "Ione Super Duty Grain" and "Ione Washed Clay."

Knauft's Report on...

European Methods of Refractories Manufacture

A report on a recent tour of refractory plants in several European countries; part one of a two part series by Robert Knauft, president of Cincinnati's Chas. Taylor Sons Co.

Prior to and since World War II our plants have been visited by a number of refractories manufacturers from Great Britain and Western Europe, representing management, research and operations. Last fall we decided to renew and broaden our acquaintance among refractory producers and certain consumers in Europe and attempt to compare their raw materials, products, equipment and methods with our own. An exchange of ideas among those of us who have common interests is always welcome, usually provocative and generally profitable.

We desired particularly to see what had taken place in Western Germany since 1946 as an industrious German people have rebuilt their refractories industry which was approximately 78% destroyed during World War II. How many of us who are operating, maintaining and improving old plants which have gone through two world wars, plus Korean, envy the Germans their opportunity to build completely anew with money provided by dollar loans under favorable terms of financing.

I am not minimizing the human suffering and wasteful damage which preceded the reconstruction, but the comparison is nonetheless a very natural one to make.

Within four weeks I visited 17 refractories plants, glass factories and laboratory facilities in four countries, Great Britain, Western Germany, Belgium and France.

Seeing old friends and renewing contacts proved to be a very pleasant and rewarding experience. My remarks are by way of general observation and unless otherwise stated are my own opinion and no reflection is intended on either the economy of any country or the operating conditions or quality of products produced by any plant. Obviously, in the time allowed there were many first rate producers of refractories in these countries whom I did not visit.

Great Britain

We landed at Prestwick, Scotland, on October 13, 1956, and spent a delightful week-end with Mr. and Mrs. Colin Stein. During the following week we visited the works of John G. Stein & Co., Ltd., Bonnybridge, Scotland, and the Jarrow works, near Newcastle, Northumberland, of Consett Iron Co., Ltd.

These two companies operate very modern refractories plants, producing a wide range of fire clay, silica, high alumina, sillimanite and various types of basic refractories. It is not uncommon to see basic, fire clay and high alumina refractories produced in the same plant, using separate facilities for storing, crushing, grinding, mixing and batching but usually the same presses for forming the kilns for firing the several grades of refractories.

In Great Britain, and to a lesser degree in Europe, women are employed quite generally in the plants as a part of the press crew and for lift truck operators. Boys above the age of 14 or 15 are frequently apprenticed to molders making special shapes.

Rotary Table Press

Bricks and shapes which are required in volume, and within practical limits as to size and shape, are dry pressed on toggle type presses or made on rotary table or hydraulic presses. In one plant, where the rotary table hydraulic press was used to produce basic, stilimanite and zircon refractories, each die charge was individually weighed. After filling, a steel plate was placed in the die cavity and the mix lightly consolidated by tamping with an air hammer, preliminary to advancing to the pressing position.

This press crew was made up entirely of women who produced between 2500 and 3000 9x4½x3" squares in eight hours. The operation was relatively slow, but the bricks produced were of very uniform density and were certainly outstanding for general appearance, smooth surfaces, square corners and edges.

Firing of fire clay refractories was done in either 1000 ft. Hoffman chamber type kilns, smaller chamber kilns of similar capacity or continuous tunnel kilns similar to our American design.

Kilns which are used for firing basic refractories are usually quite long, several of them being 550 ft. in length. The original kilns, built for firing high alumina and basic refractories, were built with silica brick in the hot zone. A new kiln under construction was being built with a fortified sillimanite brick in the hot zone.

We also saw a periodic kiln which was used for firing high alumina and basic refractories with the kiln crown built of light weight, porous silica brick.

Fringe Benefits

Employees are given fringe benefits which are comparable to those found in our industry in the United States, including in-plant hospital and medi-

cal care, cafeterias or lunchroom facilities, unemployment compensation, group insurance, etc.

The refractories business was reported to be very good in Great Britain with deliveries of ordinary fire brick ranging from 4 to 6 months, complete blast funaces within 10 to 12 months and anywhere from 12 to 18 months for large quantities of basic brick, silica brick for complete coke ovens, etc.

The British refractories industry is operating profitably and we understand that many of the leading manufacturers are expanding and modernizing their facilities. Emphasis is placed on efficient raw and finished materials handling and increased productvity, preparing to meet rising costs.

Western Germany

We visited the following plants in Western Germany and rather than describe each operation in detail, I will attempt to give you a resume of their operations, as I think that this particular group is representative of the German refractories industry.

Heinrich Koppers G.m.b.H., Dusseldorf-Heerdt
Martin & Pagentecher, Koln-Mulheim
Brohltal A.G., Koblenz
Didier-Werke A.G., Wiesbaden
DEGUSSA, Frankfurt
Dr. C. Otto & Co., Bochum-Dahlhowen
Dolomite Werke, A.G., Halden
Forschungsinstitut der Feuerfest Industrie, (German Ref. Institute), Bonn
Battelle Memorial Institute, Frankfurt

There can be no denying that the recovery in Germany under Allied occupation has been phenomenal. Evidence of destruction is everywhere, particularly in the towns and larger cities adjacent to the municipal buildings, railroad stations, freight yards and the industrial sections. Reconstruction of factories and income-producing facilities has been stressed with housing and rehabilitation of secondary priority.

We traveled a distance of some 200 miles along the Rhine between Essen and Mainz, on the very excellent and well run German State railway system and never ceased to be amazed by the amount of destruction caused by bombing and, in general, the accuracy with which the bombs were placed. The refractories plants were prime targets as one of the objectives of the Air Command seemed to be the destruction of the industries which were supplying the essential German steel industry in their war effort.

Ten Plants Lost

For example, Didier-Werke, the largest producer of refractories in Europe, founded in 1834, had 16 plants employing more than 7,000 people at the start of World War II, with an annual output of 450,000 metric tons of refractories. At the end of the war they had lost control of ten plants, the raw material sources which accompanied them, resulting in a loss of output of more than 275,000 tons per year.

New construction and purchase of other refractories companies since 1946 has brought their tonnage up to an estimated 400,000 metric tons, with ten plants in operation. Their general offices in Berlin were completely destroyed and they are now operating from beautiful newly constructed quarters in Wiesbaden.

A novel feature of the new office building is a stained glass memorial window in one end of the entrance foyer. A section of the window is dedicated to each of the ten plants and the employees which they lost at the end of the war. Most of these were taken over by the Russians as they are located in Eastern Germany.

There are 105 manufacturers of refractories in Western Germany with 127 plants. Competition is as keen as you would expect it to be under these circumstances and it is no wonder that German refractories manufacturers watch their costs and quality very carefully and place great emphasis upon workmanship and accuracy.

Support Refractories Group

Ninety-seven of these refractory manufacturers, operating 119 plants, are supporting the Forschungsinstitut —The German Refractories Institute, with headquarters at Bonn, under the direction of Dr. Konopicky. Dr. Konopicky visited the United States this spring and attended the annual convention of the American Ceramic Society and undoubtedly met many of you.

He has stated that there are approximately 23,000 people employed in the refractories industry in Western Germany and that the approximate dollar value of all refractories produced there is $105,000,000.00—(419,-000,000 for US in '56).

The average laborer in the refractories plants in Western Germany will earn about $2.50 per 8-hour day. Press operators and first rate diemakers, for example, will earn between $145.00 and $160.00 per month. Most plants work 9 hours per day 5 days a week and a half day on Saturday.

Characteristically there are no closed shops in the refractories plants in Western Germany but about 90% of the workers belong to some type of an industrial union. In Germany, as in France and Belgium, it is usual and the accepted pattern to see union and nonunion workers performing similar tasks in the same plant. Labor contracts run from one to two years and they have very few strikes.

State Runs Pensions

In Germany, pensions and unemployment benefits are provided by the State, not by the employer, except that the taxes paid to the State provide the funds from which he benefits are derived.

Standards of health and sanitation, insofar as the worker is affected, are very high in Germany and are closely supervised by the Government.

It was always impressive to see the new crushing, grinding, screening and storage facilities which are the common trade mark of the rebuilt or new refractories plants in Western Germany. These are usually brick or steel and concrete buildings, 4 or 5 stories high, with the top floor devoted to dust collection and air cleaning equipment.

Housekeeping is immaculate, part of which can be attributed to the nature of the German worker and even in the silica brick plants respirators were not in evidence.

It is a novel experience to a visiting American to walk through a factory where the worker tips his hat to the foreman and the foreman pays a similar respect to the supervising engineer, the superintendent or the representative of management. The Germans as a people are working hard to rebuild their nation and to forget some rather horrible memories which form an unfortunate part of their recent past.

Friendly to U. S.

Of general interest, we were received by plant managers or staff with great courtesy and all usually entered into a discussion of mutual problems with enthusiasm and interest. Upon direct questioning, we were told by several of the plant managers that

(Continued on page 82)

First of a Series

Knauft reports on travel and refractory manufacture in Great Britain and Western Germany.

In part two, next month, he reports on Belgium and France.

V-Belt Problems—
And The Solutions

Shown and described in this space are some typical v-belt problems likely to be encountered, and the solutions to these problems as recommended by Allis-Chalmers Mfg. Co., Milwaukee, Wis.

Problem: Base Cracking

Cause: Severe back bend idlers. Improper storage. Excessive ambient operating temperature.

Solution: Check storage conditions. If back bend idler cannot be avoided, figure number of belts again with additional 0.2 service factor. Avoid ambient temperature over 150 deg.

Problem: Oil Deterioration

Cause: Oil softened rubber, ruined belt
Solution: Splash guards will protect drives against oil. Where oil cannot be avoided, replace with oil-resistant belts.

Problem: Slip Burn

Cause: Belt too loose. Belt didn't move, friction against sheave burned rubber. When belt finally grabbed, it snapped.
Solution: Check tension. If okay, then review drive for overloading, and redesign to fit load increase.

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- Save space.
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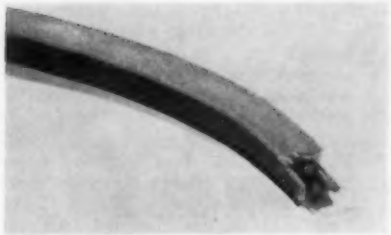
- Modern, anti-friction bearing design evenly distributes load, saves power, reduces wear.
- Simple to operate, using pushbutton or remote controls.
- Handle crushed, ground or dry materials, additives, chemicals.

5 SIZES AVAILABLE . . . Constant feed range from light trickle to 80 tons per hour. Write for bulletin.

THE MANUFACTURERS EQUIPMENT COMPANY
218 MADEIRA AVENUE • DAYTON, OHIO



Problem: Snub Break

Cause: Crack-the-whip. Cover wear indicates slip. Clean break reveals sudden snap.
Solution: Keep belts taut. Check tension.

Problem: Ruptured Belt

Cause: Ruptured cords in grommet or plies.
Solution: Check for rocks or tools falling in sheave grooves. Check tension. Belts loose enough to twist in groove can rupture cords.

Seven Check Points

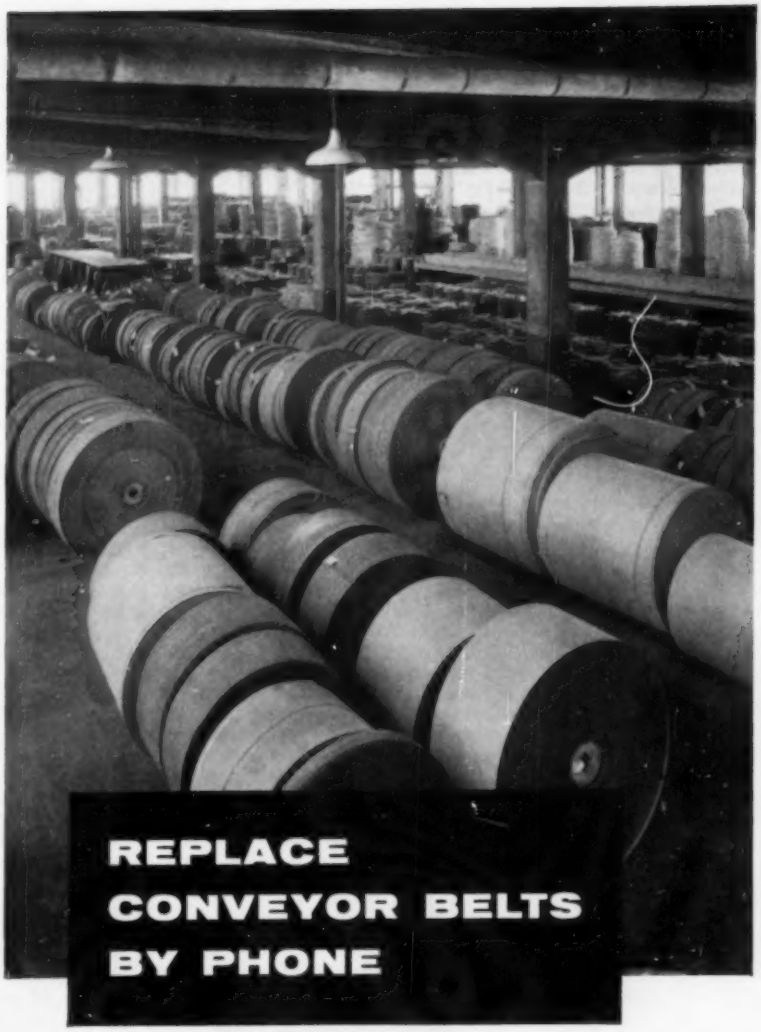
Keep Sheaves Aligned
Maintain Proper Tension
Replace v-belts in complete sets
Inspect Sheaves Regularly
Keep Belts Clean
Protect and store belts properly
Make use of check list

The appointment of Lloyd L. Schwarz as assistant sales manager of the **Universal Atlas Cement Co.**, St. Louis Division. Universal is a U. S. Steel Corp. subsidiary.

The appointment of Earthmovers Equipment & Supply Inc., as industrial lift truck sales and service representative in the San Diego, Calif., area was announced by Yale Material Handling Div., **The Yale & Towne Mfg. Co.**, Philadelphia, Pa.

Ground was broken recently for a new $3,250,000 engineering and research laboratory for the **Allis Chalmers Mfg. Co.**, Milwaukee, Wisc. The new lab will be sited at the Allis Chalmers Harvey, Ill. works.

The election of Julius E. Spector as a Vice President of **Sun Chemical Corp.**, Long Island City, N. Y. was announced recently.



In nation-wide stock for immediate delivery are H-R conveyor belts in sizes and grades for virtually every service. Orders placed by phone are processed the same day in the H-R warehouse nearest you to assure fastest shipment.

Available from stock are: *Maltese Cross*—for severest, heavy-duty handling of trap rock, stone, ore, etc.; *Ajax*—for general use such as conveying coal, sand, gravel, crushed stone; *Conservo*—for moderate general service with economy; *Monarch*—for special applications requiring resistance to oils and chemicals.

Breakdown service? When non-standard belts are needed *fast*, as a result of a breakdown, Hewitt-Robins can ship special, factory-built belts within one week or less! To order the type and size best suited to your requirements, call your nearest H-R representative, or Hewitt-Robins, Stamford, Connecticut.

HR HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS . . . POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE . . . VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

KNAUFT Continued

(From page 79)

while they did not like their status as an occupied country, they hoped that the U. S. Forces would not be withdrawn until Germany had been rebuilt to the point where she would be safe from attack or domination by Russia.

This frame of mind was again emphasized by the men who were called into service as interpreters in the refractories and glass plants by men whose English was no better than my German. We met quite a number of these men who had been prisoners of war in the United States, spoke English quite well and spoke very highly of the manner in which they were treated here.

I remember one meeting where five of six engineers in our conference group had been prisoners of war in the U. S. The sixth man had been a prisoner of the Russians. He had quite a different story to tell. The only horrifying experience in Germany, where much of the travel is done by day train, is taking an early morning train from a large center like Dusseldorf before 6:00 a. m. with the train shed practically deserted. Not speaking the language and not even being sure which direction was east or west, 4 or 5 trains screeching through the practically deserted station with no one to appeal for direction is a little frustrating.

These trains carry passengers exclusively, no mail or express, and stop for only a few minutes in even the larger cities. There is no time to rectify a mistake unless you can find some kind soul who speaks enough English to set you right. With this exception, langunge was no barrier.

People Demand Variety

Returning to the more practical side, once again we found the Germans manufacturing a wide variety of dissimilar refractories in the same factory or works, using separate facilites for grinding, screening and batching. It is very common for all of the leading refractories plants, even some of the smaller ones, to produce a variety of fire clay, high alumina, sillimanite and basic refractories in the same works. This is a service which their customers expect and competition demands.

All plants have one or more well equipped laboratories for quality control, product development and research, including petrographic and X-ray equipment in addition to the usual physical testing equipment. Most of you know that what corresponds to our ASTM tests are based on cores which are drilled from the finished refractory.

These cores are about 2½" in diameter by roughly 3" high and are used for determination of porosity, bulk density, hot load strength, volume stability, permeability, etc. Many plants use some system of statistical quality control and it is significant that the permeability test is used very extensively at the in-plant quality control level.

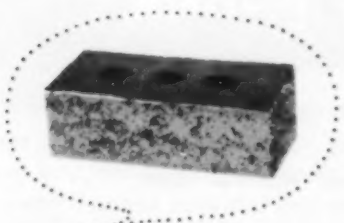
Germany has an ample supply of fire clay and plastic clays, but they do not have the high quality flint clay which we find in the United States. Consequently, their fire clay and high alumina refractories contain a high percentage of calcined clay or schamotte. This may be made by calcining dobies in continuous tunnel kilns, car bottom periodic kilns or in vertical shaft kilns.

Electricity Costs High

Rotary kilns, including the Polysius or Leopol kiln, are used for sintering high temperature refractory materials, basic refractories, etc. They have no magnesite deposits in Western Germany and at the time of my visit there was no facility for producing periclase by the sea water process. Magnesite is imported from either Austria, Yugoslavia or Spain.

Electric power is quite expensive, but they do recover aluminum hydrate from imported bauxite and produce a variety of electric furnace refractories from alumina, silicon-carbide, etc. Fused cast refractories for the glass industry are imported from the Corhart subsidiary in France.

(Continued on page 85)



Thinking about adding color?

The trend to color is apparent in all kinds of building materials *including brick.* If you are thinking about adding color, Ferro can help you.

We will work with you in establishing techniques, processes and quality controls, to maintain the color uniformity and the light and heat stability our colors make possible.

Ferro makes quality colors for all brick coloring methods — glazing, body staining, engobe and sandblasting. Our know-how comes from years of experience in all kinds of brickmaking . . . in designing and building kilns . . . in producing finest inorganic colors.

Need help? Write us, describing your equipment, firing ranges, type of clay and proposed method of applying color. We'll go to work on your problem.

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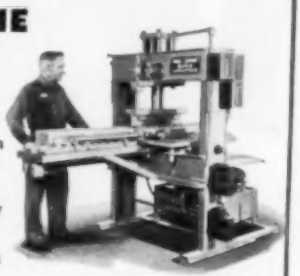
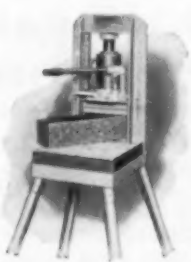
• Today — the trend toward split block is strong. Architects, builders and owners want this beautiful, modern "quarried stone" effect that is so ideal for all types of structures. Why not cash in on this tremendous market. Get the tools required . . . splitters and trimmers. The Besser Company, makers of the famous VIBRAPAC block machine, carries a complete line. Write today for literature.

1 BES-STONE SPLITTER



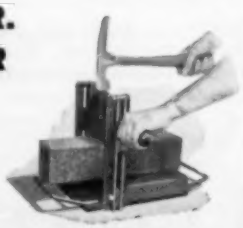
Splits block in a straight line, with speed, precision and safety. No cull block. Easily adjustable for splitting various heights. Holds block automatically in correct position. Finished split block is removed from under splitting knife by incoming block.

2 PONY BLOCK TRIMMER



Indispensable tool for on the job. Trims off the end of any block up to 8" by hand operated, hydraulic pump. Capacity 12 tons. Legs easily removable. Compact, lightweight, easily portable.

3 PONY JR. TRIMMER



Handy for trimming ends of block, brick or stone. Merely strike blade holder with heavy hammer. Cuts square or at any angle. Easily lifted by mason to scaffold.

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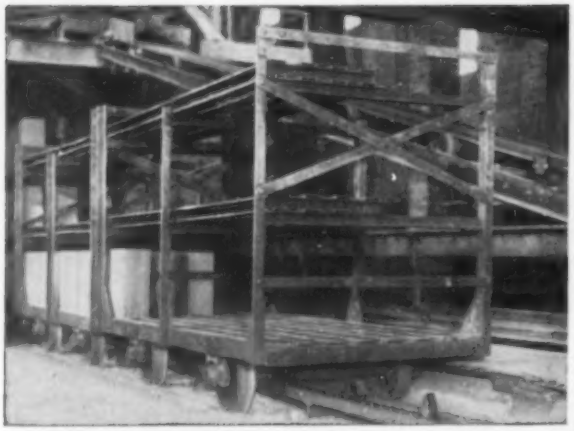
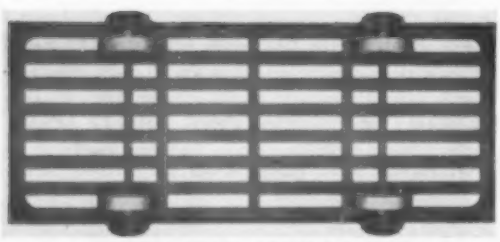


Dryer cars at Jenkins Brick Co., Montgomery, Alabama

DRYER CARS BY CHASE



Looking at the Bottom of Style 306 car frame

UNDER CONSTRUCTION OF OUR CARS

All dryer cars, single, double and triple deck are equipped with sturdy under construction. The cars are absolutely square, and are of rigid welded construction. There are five heavy cross sills. Wheels are pressed securely against the shoulder of the axle and the hub extends the proper distance to take end thrust against boxing. Bearings are dust proof, oil retaining, and roller bearing. For further information write for catalog.

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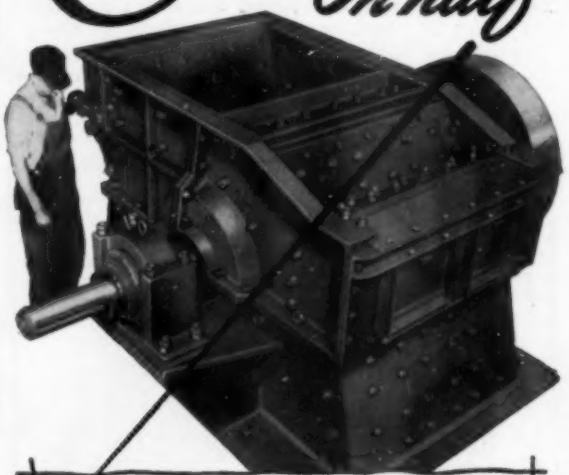
CUTS CRUSHING COSTS *In half*



•WILLIAMS HEAVY DUTY Hammer Mills

Finish grinds bank run clay and shale in *a single operation*—including hard lime particles, iron pebbles, tailing of all kinds. *Saves up to 75% of capital investment* by eliminating primary or secondary crushers, conveyors, elevators, extra drives, expensive foundations, housing and other equipment . . . *saves up to 50% on production cost*, cuts labor, upkeep, power, parts replacement, other profit-eaters!

No crusher built will stand up better under rugged continuous service. Extra heavy manganese steel breaker plates and liners—larger diameter shafts—other massive wear-resistant parts and reinforcements—all promise much greater return on every dollar invested in a Williams.

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KNAUFT Continued

Forming is usually done on relatively small, single cavity friction type or hydraulic presses or rotary table, hydraulic presses. A number of new hydraulic presses have been developed in Germany since the war, like the Laeis press, which appears to offer very definite advantages from the standpoint of control or uniformity, accuracy and shape.

Unfortunately, we found these presses to be quite expensive and auxiliaries not readily convertable into American systems for hydraulics and power. We were also rather surprised to find that the European plants used relatively common grade of heat treated alloy steels with no one particularly concerned about the necessity for using tungsten-carbide die liners to increase life.

Presses are Efficient

Frankly, I am no press expert, but I was certainly impressed with what I saw of both the rotary table and the large hydraulic presses in the refractories plants in Germany. The die charge is usually weighed automatically, die maintenance is low, die changing does not appear to be a major problem and the press will operate 9 hours per day with about 100 pounds of spillage or return at the end of the day.

We use mechanical presses and about 25% of our batch is returned to the mixer as spillage or overflow, through a green brick return system. The best grades of alloy, heat treated die liners must be changed every 8 hours if we are to hold size and eliminate fins.

Our batch is made principally of calcined or sintered grog which is both tough and abrasive. Our life ratio is about 10 to 1 with tungsten-carbide, but the cost of the setup is also on about the same ratio.

Some of the German refractories plants also use very large hydraulic presses for making large special shapes. For example, glass tank blocks measuring 12x18x36" are commonly made on these hydraulic presses which may be as large as 8,000 tons capacity. A novel use of electrolyte, batch preparation, vibrating and pressure seems to produce clay tank blocks which were reported to be equal to the best of American clay tank blocks.

Unique Ramming Method

The Europeans have one advantage in the manufacture of special shapes by the pneumatic hand ramming method which is employed quite generally in Great Britain, Germany, France and Belgium. A molding team or station usually consists of the molder and either a young boy as an apprentice or possibly a woman whose job it is to feed or sprinkle batch into the mold, at the hammer.

This job may be done by a two-man molding team, each taking turns sprinkling and ramming, to minimize fatigue. This increases the cost and is done only where wage rates are relatively low.

The apprentice usually works at one-half to two-thirds the rate of the molder and productivity in pounds per man is somewhat higher than the average for a similar job in the United States.

German Refractories Institute — I previously referred to this organization headed by Dr. Konopicky. He heads a research staff of 20, housed in very attractive buildings which have been built since the war in the residential section of Bonn.

The German Refractories Institute operates differently than we do in that they do basic research which is of benefit to the manufacturers of refractories and the consumers. They are not a service institute. The evaluation of their research is carried through from the development to the production stage.

They cannot make any tests, prepare specifications or certify data for an individual firm. It is their task to widen the knowledge in the field of refractories and to guarantee their position as one of neutrality in offering their facilities to any refractories

(Continued on page 89)

NOW-FIREPROOFED *Conveyor Belting...*

new SCANDURA

The original P.V.C. coated *Conveyor* **BELTING**

Your Safety Engineer will appreciate the non-inflammable qualities of this new amazing conveyor belt. Your Production Engineer will appreciate these unique operational features:

SCANDURA *Conveyor* **BELTING**

- **Withstands abrasions that would ruin other belts.**
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We also produce dependable, long-lasting and economical

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LETTERS TO THE EDITOR Continued

head geologist, after extensive research and laborious consideration, points out that he feels sure that our clay is as old, if not older, than any clay in continuous use in the U. S. today.

During this extensive research, he made a complete and unbiased analysis of our clay. This would have been completed years ago, except for a brownish substance found mixed in it. Clays were then extracted from pits all over the country and analyzed. No trace of the brownish substance was found in any clay tested. All contained various minerals of determined origin.

Some had a thick layer of blacking a blackish substance, which gave him the clue for this astounding discovery. Through a very secretive process, of which he claims to be the first to use, it was established beyond our doubt that this brownish substance was (word deleted—Ed.) from the prehistoric dinosaur. We believe this could go back as far as one million B.C. . . . In our opinion, this proves that our clay is the oldest in continuous use today. . . .

Dick Lamar
Southern Brick Co.
Ninety Six, S. C.

Ed. Note: The search for the oldest continuous-operating brick plant is obviously still going hot and heavy, with most of the Letters Column devoted each month to this topic.

However, Mr. Lamar has opened an entirely new field (or two) for consideration. Our Pre-Historic (Deleted) Editor suggests that anyone who wants to argue this matter with Lamar should send all correspondence and samples direct to Lamar's secretive research director.

Tunnel Kiln

Editor, BRICK & CLAY RECORD — We are contemplating building a tunnel kiln for firing our ware, and as this is a very costly investment, we would like to have as much knowledge of tunnel kilns and their operation as possible.

We shall therefore be much obliged if you will recommend us a lot of books dealing with this subject, and where obtainable.

Eoh Ban Huat Pottery Works
Kuala Lumpur
Malaya

H. H. Kieckhefer, Sales Manager of the Wheelco Instruments Div., **Barber-Colman Co.**, Rockford, Ill., announces that a Wheelco Instruments Div., Branch office has been established in Springfield, Ill.

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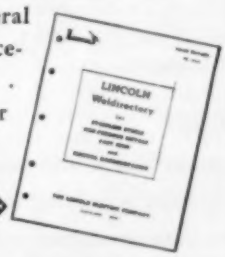
...and still going strong!

The Faceweld-12 hardsurfacing on this Muller wheel has been in operation for 3 years... still has several years of service left. It's good proof that Faceweld hardsurfacing is best for Mullers . . . lasts longer than other electrodes under heavy duty service.

Write for Weldirectory SB-1352 for data on complete Lincoln hardsurfacing line.



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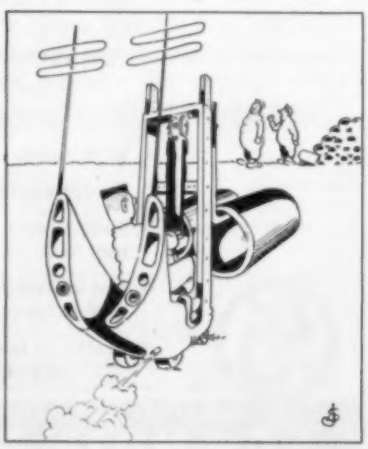
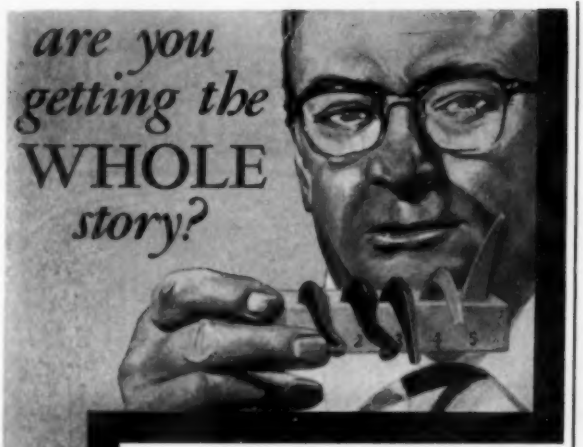
When Faceweld hardsurfacing | Has best Muller service | Yet costs less | WHY use anything else?



"That won't keep him happy much longer . . . soon they'll have to start paying him wages, too."



In order to know exactly what's happening in all parts of the setting during the critical high temperature stage of the firing cycle, a sufficient number of plaques of Orton Cones should be used.

In fact, Orton Cones used wisely throughout the setting provide practically free insurance against over- or under-firing, at the same time aiding in increasing the percentage of first-quality ware!

For over 60 years ceramists have learned that Orton Standard Pyrometric Cones are a completely reliable check on firing conditions. If you are not already using Orton Cones, request complete information on how they can be used in YOUR operation to advantage.

Also write for the Temperature Equivalent Table and the informative free booklet PROPERTIES AND USES OF PYROMETRIC CONES.

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Clipper also builds the famous **"Select-A-Notch"** Masonry Saw—the Saw that one man can adjust from his cutting position. priced from **$335**

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Drakenfeld offers you practical help in solving color application problems. Our experienced technologists and the most modern color research and production facilities are ready to serve you. We invite your inquiry.

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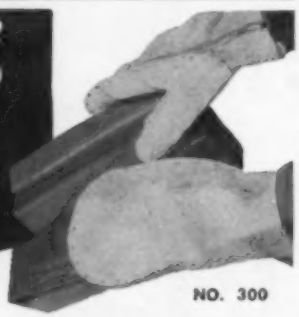

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HEAVY SPLIT-COWHIDE MITTEN NO. 300.
$12.60 PER DOZEN PAIRS.

Avoid costly injuries to the hands of your workers by giving them the protection they need—Tufhorse gloves, hand pads or mittens. Made of the finest cowhide, they are flexible and comfortable to wear.

ORDER SAMPLE PAIRS AT "PER-DOZEN" PRICES

Please send me samples of
☐ Glove No. G-9 ($16.50 per doz. pairs)
☐ Mitten No. 300 ($12.60 per doz. pairs)
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Chem-o-sol is a special plastisol formulation, endowed with all properties required of the new plastic clay pipe joint. It assures optimum gasket performance, physically and chemically.

In addition, **chem-o-sol** is formulated to assure you of controlled high speed production, unequalled by any other plastisol formulation—or any other gasketing material whatsoever. Consistent handling properties and stability result from our big-scale production, up to 15,000 lbs. in a batch. Hence perfect gaskets flow smoothly from your line, and waste is practically eliminated. You can be sure of —

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Chem-o-sol is superlative gasketing because it originates in the world's largest plant of its kind, where continuing research keeps our product in the lead. Write for data or telephone GEneva 4-1770.

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KING PHILIP ROAD • EAST PROVIDENCE, R. I.
Member Vinyl Dispersions Division of The S.P.I.

KNAUFT Continued

plant or consumer. Customer complaints are not referred to them for an unbiased opinion.

The Institute is in close contact with the technical and scientific organizations of the consumer industries in Germany and throughout Europe and takes an active part in the presentation of technical papers which are presented before the societies. The top floor of their building is devoted to an attractive board room where the monthly meeting of the directors of the German Refractories Institute takes place.

Most of their work is published and reprints of many of their articles are available, in Germany, if any American refractories manufacturer cares to write for them.

Battelle Memorial Institute—Within a short space of three years Battelle has built up facilities and a very fine organization of 350 workers at Frankfurt. Dr. Max Barneck is technical director and Dr. Dietrick Harkort is in charge of ceramic development.

Being new, they have an excellent refractories laboratory, well equipped for all scientific studies. We were particularly impressed with the new Leitz high temperature microscope which can be used to observe and record changes in mineral and crystal growth up to 1800°C.—about 3250°F.

A visit to this laboratory would be worthwhile for any of you who are planning on a trip to Germany.

Incidentally, if you are interested in a rather detailed account of the visit of a group of British refractories manufacturers to Western Germany, details are given, together with photographs, in the June 1955 issue of The Refractories Journal. Copies may be available by writing to the Refractories Association of Great Britain, London and Sheffield Publishing Co., Ltd., 7 Chesterfield Gardens, Curzon Street, London W1. The cost is 2 shillings six-pence, plus postage — (about 35 cents).

To Be Continued

Five dealers were appointed to sell and service the Michigan line of tractor shovels and excavator cranes, products of the Construction Machinery Div., of **Clark Equipment Co.**, Benton Harbor, Mich. They are: Graid Equipment Co., Nevada and Calif.; Interstate Equipment and Supplies Co., Inc., Vt.; Cramer Machinery Co., Ore. and Wash.; Equipment Inc., Miss.; Construction Equipment Co., Manitoba, Can.

John D. Grayson, former Vice President and Treasurer of **American Tractor Corp.**, Ft. Wayne, Ind., was named Controller of the **J. I. Case Co.**, Racine, Wis. American Tractor recently merged with Case.

LIFT TRUCKS CUT KILN DISCHARGE FROM 3 DAYS TO 4½ HOURS

Bricks are picked up from dryer cars for setting in kiln.

Beehive kilns are set and discharged with lift trucks.

Finished brick in strapped loads facilitates storage and shipment.

The Owensboro Brick and Tile Company, Inc., manufacturers of face brick in Owensboro, Kentucky, have drastically reduced time and labor costs through mechanization with Hyster 20 Lift Trucks.

The firm's seven beehive kilns each have a capacity of about 173 brick "cubes". A kiln is now completely charged by one Hyster Lift Truck, equipped with Bickerstaff forks, in six hours. No hand setting required.

Discharge is now accomplished with Hyster Lift Trucks in an average time of 4½ hours. This operation previously required a team of 5 to 6 men working three entire days. In addition to time and cost savings, fewer bricks are chipped or broken.

Finished brick are strapped in unit loads for easy storage and shipment with considerable savings in handling time. Damage is also held to a minimum.

Your Hyster dealer can help you make your operation more profitable, too. Call him today.

Call your Hyster Dealer. He is in the yellow pages under "Materials Handling" or "Trucks-Industrial"

HYSTER COMPANY

Hyster Industrial Trucks Increase Profits for Brick and Clay Plants

Factories: PORTLAND, ORE. • DANVILLE, ILL. • PEORIA, ILL.
NIJMEGEN, THE NETHERLANDS • SAO PAULO, BRAZIL
GLASGOW, SCOTLAND • SYDNEY, AUSTRALIA* *Under License

C,B&W Modernizes Plant, Doubles Output

Replacement of virtually every major machine tool, complete overhead crane system, and addition of an east wing to the plant were high spots of the complete modernization and expansion of production facilities at Chisholm, Boyd & White Co., Chicago. Huge Giddings & Lewis boring mills and planers are reported to allow much finer tolerances on all Boyd presses. Company says that output of presses has been doubled since 1955. Picture shows plan after modernization work.

Dr. Donald S. Taylor has been elected Vice-President in Charge of Research for **U. S. Borax & Chemical Corp.** He succeeds G. A. Connell, now retired. Taylor's headquarters will be in the new $1 million research center now being completed at Anaheim, Calif.

Clyde R. Dean Jr., general sales manager of Yale Materials Handling Div., **Yale & Towne Mfg. Co.**, has announced the appointment of James Rainey as district sales manager, South Central U. S.

Industrial Truck Div., **Clark Equipment Co.**, has named four new district sales managers: Marvin B. Dickey has been made manager for a Midwest area in Detroit, Grand Rapids, South Bend, Toledo; Earl F. Patterson is manager of the New England area, parts of New York and Canada; William C. Portman is manager of a district covering parts of Ohio, Pa., W. Va., and Va. R. W. Self has a midwest district covering Minneapolis, Davenport and Des Moines, Omaha, Kansas City, St. Louis, etc.

Capacity rating of most series of Timken roller bearings have been increased by as much as 39%, according to engineers of **Timken Roller Bearing Co.** Most ratings have been increased by about 10%, making it possible to use smaller bearings in many applications, in a more compact product and other advantages.

made with Foote EBONY Manganese

Air floated Foote EBONY Manganese Ore—*famous for more than 30 years as the industry's No. 1 gray coloring agent*—gives outstanding color uniformity to a variety of gray brick formulations. The consistent and extreme fineness of this material produces flat gray shades that are free of specks and patches of lights and darks. The shades produced in different parts of the kiln are so uniform that sorting is usually unnecessary.

Write for complete details on EBONY Manganese Ore, PETALITE, and Foote's many other ceramic materials.

Foote MINERAL COMPANY

FOOTE MINERAL COMPANY

442 Eighteen West Chelten Building

Philadelphia 44, Pa.

RESEARCH DATA RELEASED BY DUR-O-WAL

Independent Study Now Available to Industry

In an effort to obtain pertinent information as to how joint reinforcing actually affects the strength of masonry construction, Dur-O-waL sponsored a program of research carried on by the Research Foundation of the University of Toledo in 1956.

A total of 39 walls, 9'-4" x 4' were built and tested. More than two dozen tension tests were made on plain and deformed wires; 80 pull-out tests were made to determine bond characteristics.

Guide for Comparison

Three points of importance in comparing quality —

1. Weight of material
   a. Comparison of actual weight per 1000 lineal feet.
   b. Flexural strength in relation to weight of steel in wall.
2. Deformation
   a. Report of tests
3. Mortar Locks
   a. Report of comparative tests

You are invited to send for your copy of the research findings to learn how this truss design member provides superior lateral and horizontal reinforcing.

Manufacturing and Distributing Facilities

More than 8,000 dealers stock Dur-O-waL, which is distributed in key markets throughout the United States. It is readily available in your area now.

Dur-O-waL is manufactured by the Dur-O-waL Division, Cedar Rapids Block Company, Cedar Rapids, Iowa; Dur-O-waL Products, Inc., Box 628, Syracuse, N.Y.; Dur-O-waL of Illinois, 119 N. River Street, Aurora, Illinois; Dur-O-waL Products of Alabama, Inc., Box 5446, Birmingham, Alabama; Dur-O-waL Products, Inc, 4500 E. Lombard St., Baltimore, Md.; Dur-O-waL Div., Frontier Mfg. Co., Box 49, Phoenix, Ariz.; and Dur-O-waL, Inc., 165 Utah St., Toledo, Ohio.

Advertisement

Brick Advertises Even in 1 B.C.

Here's an item sent to us that's pretty interesting, from a historical point of view, proving that advertising of brick isn't a particularly new development. The photograph with the item shows Dr. Tongue with some of the advertised brick:

The advertising profession was busy back in 1 B.C., and their tactics have not changed one bit since then according to Dr. William R. Tongue, professor of Classics at the University of Oklahoma.

Dr. Tongue recently returned to the Norman campus after a sabbatical year's leave of absence where he was a Research Fellow with the American Academy in Rome where he spent considerable time translating the stamps or advertisements on bricks excavated from the town of Cosa in Etruria near Rome.

Cosa was a flourishing fortified hill town overlooking the sea coast from the period of 1 B.C. through 3 A.D. Discovery and excavation of the town began in 1948. At that time Dr. Tongue was also a Research Fellow

with the American Academy in Rome.

He was able to date the exact existence of the town by the stamps or impressions on some of the excavated brick. Since 1948, as the excavation continued, pictures or "squeezes" of the stamps have been sent to Dr. Tongue for translation and interpretation.

Nineteen hundred and fifty seven years ago brick potters had the habit of advertising their products in much the same manner as brick manufacturers do today. As the moist clay was formed into the shape of the brick an impression was stamped into the soft clay stating the name of the factory, the name of the estate making the brick, or sometimes even the name of the potter himself.

Brick were all handmade and hand molded in 1 B.C. but more or less the same procedure for making them was employed as modern brick potters use. The moist clay with its impressions were placed into ovens and baked. Down through the years the brick have remained intact, and along with the brick the advertisements impressed upon them.

Some 1 B.C. brick manufacturers were politicans and along with their name they had the name of the current Roman consul stamped upon the brick. This bit of political advertising enabled Dr. Tongue to definitely date the town of Cosa's life. No brick were found dated later than 3 A.D. so it is assumed by Dr. Tongue that the town was then abandoned.

The Cosa brick are more of a tile than an actual modern brick. Almost all of the excavated brick are approximately 1½ inches thick. Dimensions of the brick varied, but most were apparently quite large. This could be determined from the size of the excavated fragments. Few were found completely intact.

In 1 B.C. Lucius Titinius was a well known brick manufacturer. Dr. Tongue examined many brick bearing his stamp. Another prominent Cosa brick maker was Glaucius Lucretianus. Brick made by these two manufacturers were found dating from 1 B.C. to 3 A.D. One brick discovered proclaimed that it was made by Pro (———) slave of Gnaeus F. Slave (———) was an artisan proud of his work so he signed it and advertised the fact just as an artist signs his painting.

Remember.... your best buy!
Ludlow-Saylor
Super-Loy
WOVEN WIRE SCREENS
Tougher resistance to wear, fatigue, vibration and distortion reduces replacement cost and downtime to a minimum . . . keeps product uniformity and output high . . . lowers your cost-per-ton . . . makes L-S Screens Your Best Buy!
Immediate Shipment of most weaves and sizes
Write For Condensed Screen Reference Catalog
SINCE 1850
LUDLOW-SAYLOR WIRE CLOTH CO.
604 South Newstead Ave. • St. Louis 10, Mo.
SALES OFFICES: Birmingham, 1727 Sixth Ave., North; Chicago, 5807 W. Diversey; Pittsburgh, Union Trust Building; Houston, 1213 Capitol Ave.; Denver, 1530 Carr St.; WEST COAST: Star Wire Screen and Iron Works, Inc., 2515 San Fernando Road, Los Angeles; Subsidiary, Ludlow-Saylor Wire Cloth Co.

A.B.C.—Service and Quality Unlimited

The words you are reading, along with the other editorial and advertising matter in this publication, have a tangible quality. They, and the values they represent, are definite things which can be studied and appraised.

By the same token, the audience to which these messages are exposed has the same tangible quality.

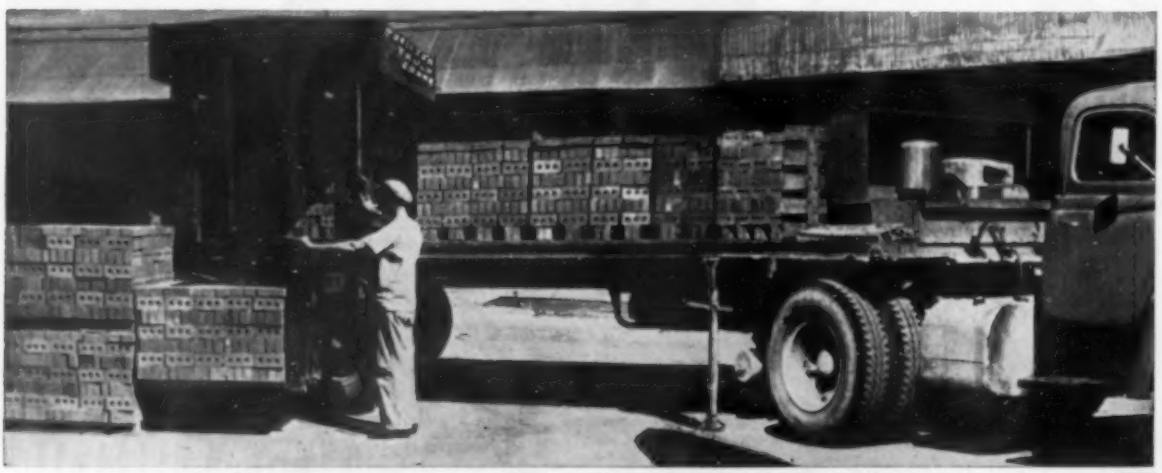
Data provided by Audit Bureau of Circulations give us —and our advertisers—the answers to many questions about you, our readers. The facts tell how many people buy copies of this publication, what products you are likely to buy and much other information.

We hope you won't feel self-conscious now, knowing you are being counted by A.B.C. We did want you to know, though, that this circulation audit helps us to serve you and our advertisers more efficiently.

There is an added benefit to an A.B.C. publication. Its circulation is paid, as the little symbol at the top of this article indicates. This means that the readers of BRICK & CLAY RECORD think enough of it to invest their money in it. And advertisers know that a paid reader is an *interested* reader.

For us on the publishing end, membership in A.B.C. is both an honor and a responsibility. We are proud of A.B.C. as a symbol of integrity and will always strive to maintain the faith in us on the part of our readers which are membership in this organization connotes.

"Come to think of it, he's been buildin' his new brick home for twelve years now."



THE PRIESTER TRUCK CRANE

(PATENTED)

16 units of 500 bricks each unloaded by driver alone, merely pushing buttons.

Unloads off either side. Puts loads on sidewalk where they belong. Requires less than half the unloading space that other devices need. Handles brick or block unpalleted or palleted or packaged. Not necessary to move truck. Unloads one, two or all units at one place! No chipping or breaking bottom bricks or blocks. Gentle handling. For full details, ask for Bulletin TC53.

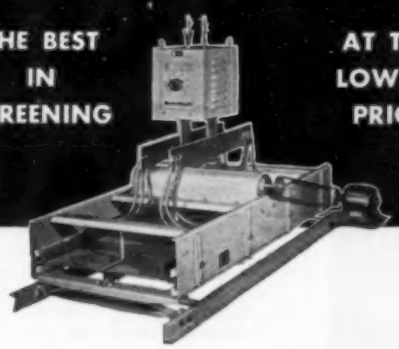
BRADNEY MACHINE CO., INC.

Middletown, N. Y.

UNIVERSAL

THE BEST IN SCREENING

AT THE LOWEST PRICE



The Most Modern and Efficient Electric Heating Equipment

SURPRISINGLY LOW IN COST

Be sure to get the facts regarding the new improved Universal Screens and Unilec Heating! Just ask for catalog #150.

UNIVERSAL VIBRATING SCREEN CO.
Racine, Wisconsin
Quality Screens Since 1919

For grinding, pulverizing, mixing—

TIPP-TRONIC Mill Load Control

Purpose: To maintain the proper material load in the mill, without manual attendance.

The current drawn by the mill motor is monitored continuously by a contact ammeter. Two adjustable pointers are set to provide high limit cut-off and low limit turn-on for the feeder system to the mill. When the current drawn by the mill motor exceeds the high limit, the control turns off the feeder. The feeder remains "off" until the current drawn drops to the value set by the low limit pointer. The meter reads only average changes in motor load.

Write for Control Bulletin AC/3

TIPPTRONIC, INC.
Chagrin Falls, Ohio, Phone: CHestnut 7-6502

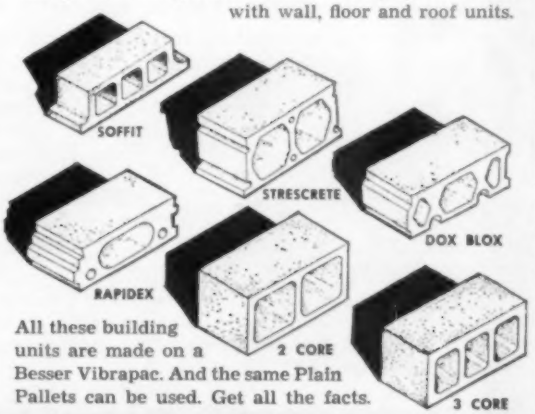
Go After the Entire Market!

Block for WALLS

Block for FLOORS

Block for ROOFS

Fire-safe walls? Of course! But floors and roofs should be fire-safe, too. Walls are full of openings (windows, doors, etc.), while floors and roofs are relatively solid. Actually, TWICE the volume of block is required for floors and roofs than is required for walls. So why not go after this profitable market? Supply customers with wall, floor and roof units.

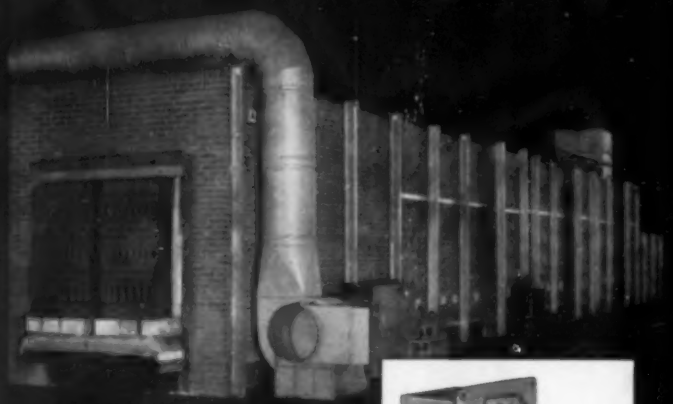


All these building units are made on a Besser Vibrapac. And the same Plain Pallets can be used. Get all the facts.

Write for Bulletin

BESSER COMPANY
ALPENA, MICHIGAN, U. S. A.
Complete Equipment for Concrete Block Plants

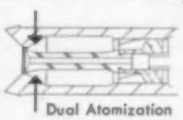
BURNING EFFICIENCY ASSURED



New 250 ft Allied tunnel kiln at Hanford Brick Company, Inc., Burlington, North Carolina

with Eclipse Gas-Oil Burners

More profit return is assured from tunnel kiln efficiency features by the use of 44 Eclipse "CF" Gas-Oil Burners in this new installation. That's because unique atomizing tips on burners provide better combustion that results in more heat per fuel dollar, burning gas or fuel oil.



Dual Atomization

Combustion air in "CF" tips is mixed with the fuel in a rotating and converging pattern that results in complete air/fuel mixing, cleaner combustion . . . and constant temperatures with stable, minimum flames.

Fast, positive switching from one fuel to another in event of sudden fuel shutoff is a simple matter with "CF" burners. All types of industrial gases and commercial oils may be used, or straight oil versions are available. Fuel, installation, and application flexibility of Eclipse "CF" Burners simplifies kiln construction and operation. Air and gas inlets that can be rotated a full 360 deg and the dual-port oil ratio valve facilitate installation. Flame adjustments are made easily and quickly. The entire burner may be removed from the mounting flange for cleaning.

If you are planning a new tunnel or periodic kiln . . . or are modernizing an existing unit . . . investigate Eclipse as the unified source for your fuel-fired burners, blowers, mixers, and valves.

ECLIPSE FUEL ENGINEERING CO., 1023 Buchanan St., Rockford, Illinois
Eclipse Fuel Engineering Co. of Canada, Ltd., 20 Upjohn Road, Don Mills, Ont.

Eclipse COMBUSTION EQUIPMENT

SEALS Continued

rubber in many of its applications. The rubber lip seal, in most applications provides better sealing at high speeds, high temperature and where misalignment and run-out conditions exist. Rubber lip type seals are also effective dirt seals.

There are definite reasons why rubber seals have not replaced leather seals in all applications. Therefore, it is suggested that unless a rubber seal is recommended, the original leather lip seal should be used.

When possible, prior to installing a leather lip seal, soak the seal in warm oil for about a half hour. A rubber lip seal should just be dipped in oil. Install the seal with the wiping edge turned in the direction recommended. For single lip seals, leather or rubber, it is a general rule that the lip of the seal points toward the material to be sealed. That is, if the primary function of the seal is to exclude dirt from a compartment, the lip of the seal should be pointed toward the outside. If the primary function is to seal lubricant in a compartment, the lip of the seal should point toward the compartment containing lubricant.

Double Lip

A double lip seal, whether leather or rubber, frequently has one lip which is wider than the other lip. In applications requiring such a double lip seal, the spring side of the seal, which has the wider lip, should always point toward the lubricant to be sealed. If two compartments containing lubricant are separated by a double lip seal, the wider lip should point toward the compartment containing the higher pressure or the compartment wtih the most fluid lubricant.

There are several ways to install lip type seals. If the seal to be installed must pass over a sharp shoulder, keyway or spline, shim stock should be wrapped over these areas and the shim stock lubricated to provide a smooth, sliding surface for the seal lip. If shim stock is not available, a heavy paper coated with grease will work satisfactorily. To drive the seal in place, use a driving member that will press against the outside rim of the seal.

O-Ring Seal

Another commonly used synthetic rubber seal is the O-ring seal. This seal should be dipped in oil just prior to installing and should be rolled over the shaft on which it is to be installed, or placed into its groove with a minimum or stretching. Also, make sure the O-ring is not twisted when it is placed in its groove. O-ring seals are inexpensive and, once used, conform to the shape of the groove in which they are installed. They are, therefore, usually replaced at disassembly and seldom reused except in an emergency.

We're Drumming Up Business...

every
Glazed Brick and Tile Producer
needs

HOMMEL

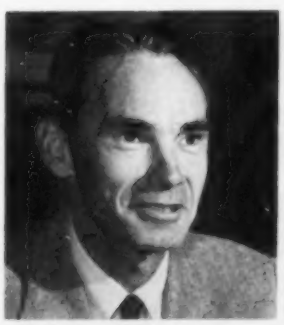
the best in

FRITS and STAINS

- **GLAZE FRITS**—Lead bearing and leadless compositions for all types of glazed ware.
- **GLAZE STAINS**—Pastel and brilliant color shades with wide firing range and stability at high fires.
- **BODY STAINS**—Made to meet all requirements of your clay body. Guaranteed uniform color.
- **ENGOBE STAINS**—A complete palette for slip painting and all-over Engobe decorations.

"The World's Most Complete Ceramic Supplier"

THE O. HOMMEL CO.
DEPT. BCR-1057 PITTSBURGH 30, PA.
WEST COAST—4747 E. 49th STREET, LOS ANGELES



Largest producer of structural glazed tile West of the Rockies

Chuck Kraft Says...

Charles W. Kraft, President
Kraftile, Inc., Niles, Calif.

"MOTION-TIME ANALYSIS doubled our 'Off-bearers' productivity."

How can motion-time analysis trim your labor costs, improve the quality of your product?

Write...

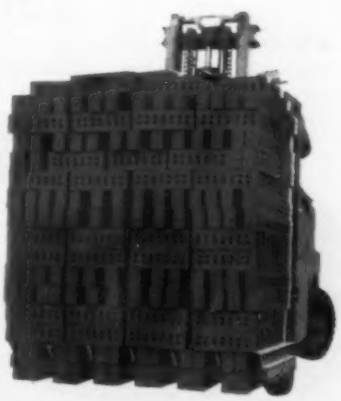
A. B. SEGUR & COMPANY *Industrial Engineers*
OAK PARK, ILLINOIS

Over 226 brick plants can produce this "red-letter" file!

Over 226 brick plants throughout the U. S. and many foreign countries are now using Bickerstaff Brick Forks. More and more, plant operators are discovering that for every type kiln, for every operation, every size package, Bickerstaff Brick Forks save them money and man hours all along the way. Put this "red-letter" file in your business today

WITH A

BICKERSTAFF BRICK FORK



Efficiency at Henderson Clay Products, Henderson, Texas: Norman brick being carried from storage yard to loading dock by 6 x 4 Bickerstaff Brick Fork.

Write for FREE Descriptive Bulletin Today

BICKERSTAFF, INC.
COLUMBUS, GEORGIA

MFG. OF MATERIAL HANDLING EQUIPMENT

West Coast Representatives:
WALTER C. STOLL & SONS
5028 Alhambra Ave., Los Angeles 32, California

NEWS OF TRADE

Personnel Changes, News Events, Obituaries Concerning Industry Equipment Suppliers.

Dr. Claude A. Lucchesi was named director of the analytical research department of the **Sherwin-Williams Co.**, Chicago, Ill. The department is an outgrowth of the analytical section of the company's Chicago paint research department.

The **Hugh R. Noel Co.**, Richmond, Va., was named distributor for the **Baker-Raulang Co.**, Cleveland, Ohio, according to an announcement by G. B. Davis, Director of sales for Baker-Raulang.

Two promotions in the Industrial Truck Div., **Clark Equipment Co.**, Battle Creek, Mich. L. A. DePolis, director of sales; and Bert E. Phillips, sales manager.

Wholesalers, Inc., Peoria, Ill., has been named distributor for **Allis-Chalmers Co.**, Milwaukee, Wisc., motors, control and pumps in 33 Illinois counties.

The second major expansion in two years is expected to increase production of power cranes and shovels by 40% at the Link-Belt Speeder Corp., subsidiary of **Link-Belt Co.**, Cedar Rapids, Ia.

Dr. E. M. Kipp, joins **Foote Mineral Co.**, Philadelphia, Pa., as director of research. In his new capacity, Kipp will direct activities of Foote's research and development department at Berwyn, Pa.

President, G. A. Gilbertson, **The Frank G. Hough Co.**, Libertyville, Ill., announced the election of **T. F. Flood**, Vice President, to the Board of Directors by the shareholders of the company.

Shipments of $24,762,342 for the quarter ended March, 1957, were reported by **Bucyrus-Erie Co.**, South Milwaukee, Wisc. This represents an increase of 20.2% over shipments of $20,596,875 in the first quarter a year ago.

Wallace Collett was appointed Product Sales Manager, Material Handling Department, Tractor Group, **Allis-Chalmers Mfg. Co.**, Milwaukee, Wisc. Previously Collett was with the Tractor Group Sales Training Section.

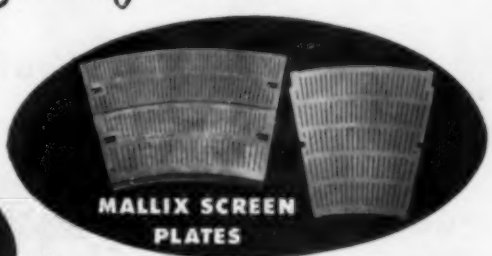
In order to better meet demands and future requirements of industrial truck users in northeast Ohio, the Cleveland Sales and Service Branch of **The Yale & Towne Mfg. Co.**, Philadelphia, Pa., has moved its main offices into larger quarters in Cleveland and established sub-offices in Youngstown and Akron, Ohio.

Crunkleton Co., of Virginia, Roanoke, Va., was appointed to sell and service the fork-lift trucks, straddle carriers and powered hand trucks produced by the Industrial Truck Div., **Clark Equipment Co.**, Battle Creek, Mich.

USE MALLIX SCREEN PLATES and GRATE BARS

for Outstanding Performance...

● Mallix plates and bars are made from a specially heat-treated material. Tough but not brittle, they stand up under severe service without breaking—will outlast all ordinary types. A-5593



Since Mallix plates are harder and stronger than most, slots can be more closely spaced. Uniform sizing is assured by their smooth, clean openings. Their tapered slot design keeps material flowing freely.

Mallix finger bars give uniform air distribution and have excellent self-cleaning properties. Can be furnished for any desired slot openings.

Tough Mallix grate bars will give you economical grate bar cost per ton of light-weight concrete aggregate. Straight slot, pinhole or herringbone type bars are available.

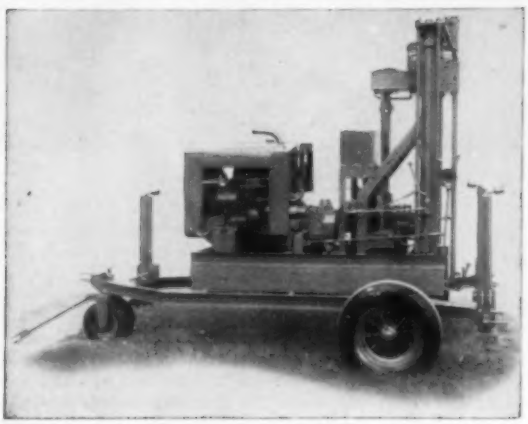
NATIONAL Products FOR TRANSPORTATION AND INDUSTRY EST. 1888

NATIONAL MALLEABLE and STEEL CASTINGS COMPANY
CLEVELAND 6, OHIO
SCREEN PLATES • GRATE BARS • PALLETS • PALLET WHEELS • PALLET SIDE PLATES • PUG MILL BLADES

IN MINUTES . . . INSTEAD OF DAYS

Samples obtained from depths up to 100 feet with the all new

Parmanco



Model HV-172
Hydraulic Vertical Drill

- HEAVY DUTY
- FOUR SPEED AUGER
- FINGER TIP CONTROL
- 65 H. P. MOTOR
- ALL DRIVES MOUNTED ON TIMKEN ROLLER BEARINGS

RUGGED COMPACT EASY TO OPERATE

•

THREE LEVELING JACKS TO INSURE STRAIGHT HOLES. FIELD PROVED

Complete Information on Request

SPECIALISTS IN AUGER TYPE DRILLS

PARIS MANUFACTURING COMPANY

PARIS, ILLINOIS

ORGANIC BINDERS

GLUTRIN

(liquid)

or

GOULAC

(powder)

Especially suitable for increasing the molding and dry strength of

- **BRICK**
- **CLAY REFRACTORIES**
- **NON-CLAY REFRACTORIES**
- **SILICA REFRACTORIES**
- **REFRACTORY CEMENTS**
- **PLASTIC REFRACTORIES**
- **TERRA COTTA**
- **STRUCTURAL TILE**
- **SAGGERS**
- **SEWER PIPE**
- **FLUE LINING**

Small amounts required — easy to use. Economical and larger production of first quality product absorbs the investment many times.

Many successful users. We'll be glad to submit samples and our suggestion on procedure and amount needed.

Robeson Process Company

American Gum Products Company

P.O. Box 960 • Erie, Pa.

*The following is taken from Technical Bulletin # 5008—"Ceramic Glazed Sewer Pipe", by Pemco's Technical Supervisor-Glazes.

Report to SEWER PIPE MANUFACTURERS

*Items 1 and 2 appeared in an earlier advertisement.

3 Tests in some states where it has been necessary to have sewer pipe stand specific hydrostatic pressures indicate ceramic glazed pipe, when the glaze is properly fitted to the clay, does not craze, and has received approval for this use.

4 Ceramic glazes can be applied to clay pipe in an extruded state, leather hard state or on dried pipe by spraying, flushing, dipping or by roller.

These and many other important facts are contained in Technical Bulletin # 5008—yours for the asking.

For a complete and frank discussion of the product advantages, production savings and sales benefits that can be yours with the ceramic glazing of clay sewer pipe, contact your Pemco representative.

PEMCO corporation

BALTIMORE 24, MARYLAND

World's Largest Manufacturer of Glazes for the Ceramic Industry

Can You Afford A Fire?

The scene pictured in the photograph with this story is one that's happened in many brick plants over the years . . . and one that could happen in your plant. It hardly seems necessary to point out the possible loss to you in life, health, property and plant if a major fire should hit your plant.

Because October is Fire Prevention Month, we feel it might be well to review some safety tips that you can use.

Beginning with the worst, in case fire begins in your plant, report it as soon as possible, making sure that your men are familiar with the local fire department number. Be sure and give adequate directions to your plant.

Check Fire Extinguishers

Be sure that all of your men know the location of fire extinguishers. See that the extinguishers aren't blocked by equipment or boxes. Be certain that your men know what type of fire—paper, flammable liquids, or electricity —the extinguisher was designed for. Check frequently to see that the extinguisher is in proper shape; that it's been refilled if used recently. Be sure your men know how to operate any particular type you might have.

Keep Your Plant Clean

Since some dust can explode, causing fire, keep your plant clean. Check frequently to make sure that no vapor is escaping from any barrels of flammable liquid.

When welding, soldering, or cutting, be sure to wet-down, cover or remove all flammable material. The National Safety Council points out that sparks can travel over thirty feet. When doing any of these operations, be sure to use stands; turn off all equipment when through.

Other tips include being sure not to overload electrical circuits; keep extension cords overhead and out of the aisle. Leave electrical work to the electrician. Keep your fuse box clean and don't overfuse.

Watch Trash Fires

When burning trash away from the plant, be sure to keep the fire fifty feet away from combustible material. Keep no oil rags lying around. Avoid static sparks when pouring flammable liquids. Keeping flammable liquids in the approved, proper containers is a good safety measure.

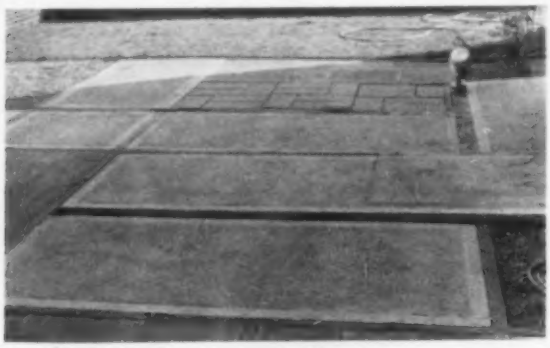
Workers who smoke in the plant should use necessary care to be sure no lighted cigarets are left lying around, and that smoking isn't done in unauthorized areas.

Follow these tips for fire safety . . . check your plant frequently for fire hazards.

"Sample Patio Floors" Make More Sales

At least a partial answer to the problem of slow slow-downs in home construction can be found in putting heavy merchandising emphasis on patio floor, according to Don Gunning, of Colorado Brick Company, Denver.

The courtyard on the south side of Colorado Brick's modern Denver office has been set up as a "sample display" with, as shown, a dozen examples of patio paving in 8x4 foot segments. Included are paving blocks, SCSR brick, laid on its side and flat, standard brick, etc. Interspersed in between each brick example are similarly size segments of ordinary cement flooring, which provide an effective means of illustrating the greater eye-appeal and durability of the brick patio floor over concrete.



Colorado has experienced a sharp increase in "outdoor living" during recent years with many backyards being converted to "outdoor living roms," including outdoor, barbecue pits, weather proof outdoor furniture, etc., lending impetus. Brick patio flooring fits ideally into the picture, Colorado Brick has found, and consequently, a consistent advertising program, personal demonstration whenever possible to customers, etc., is being used to sell brick in this channel.

Signs Make Truck Moving Billboard

An innovation in sign promotion which is paying everyday dividends at Denver Brick & Pipe Company are billboard-like poster signs which are currently being used on straddle trucks.

Suspended across the open rear end of straddle trucks in use both in the yard and out on major construction products using Denver Brick & Pipe products, the signs are painted in six colors and utilize the firm's familiar "Little Brick Layer" cartoon figure to suggest "Build With Brick." Artwork on the sign shows the "Little Brick Layer" tuckpointing a wall, etc.

another special service in

Pemcolors

Pemco has matched the facing tile industry's standard colors, as illustrated in the recent brochure published by the Facing Tile Institute, affiliated with the Structural Clay Products Institute. Now you can have Pemcolors in either the standard shades of the industry, or in special colors to match any specification.

In addition to this outstanding color selection, Pemco offers vast experience, plus personalized service to help solve your production problems.

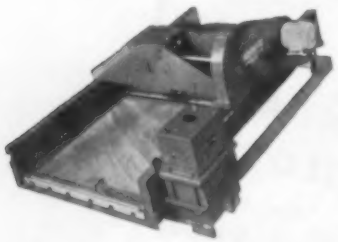
Pemcolors give you PERFECT UNIFORMITY with

- **ZINC OR ZINCLESS GLAZES**
- **MATT OR GLOSSY FINISHES**

SPECIAL OFFER: For a no-obligation demonstration of Pemco's color matching skills . . . just send us a sample of your clay and mention the firing temperature you use. We will match just about any color you desire.

PEMCO corporation

Customer Service Department
Baltimore 24, Maryland



The Leahy® Heated Screen Proves Fast, Accurate Economical

The Leahy No-Blind® Vibrating Screen with FlexElex® heating of the jacket not only steps up production of screened clays and shales, but it delivers accurately sized products at low, low screening costs.

No other heated screen so completely integrates all operating elements. Even the heating transformer and circuits have been designed for utmost economy of power, and complete elimination of flexible connectors.

When jackets are changed, there are no external circuit connections to break or remake, reducing down-time to an absolute minimum.

The Leahy Screen is made to operate as an independent unit, may be paired with a second screen or combined in a battery of several units. Open or closed models are available in a variety of sizes.

Send for Bulletin 16-EH.

THE Leahy NO-BLIND VIBRATING SCREEN

— offers —

INTEGRATED HEAT SCREENING

THE DEISTER CONCENTRATOR COMPANY

The Original Deister Co., Est. 1906

913 GLASGOW AVE. FORT WAYNE, IND.

NEW

literature for the SUPERINTENDENTS LIBRARY

Transmission Products

The new 88-page Jeffrey catalog No. 914 contains engineering-type drawings and complete tables of specifications for a variety of shaft collars, couplings, clutches, pillow blocks, take-ups, wheel hubs, gears, holdbacks, chains and sprocket wheels. Jeffrey Mfg. Co., Columbus 16, Ohio.

733/Circle on Reader's Service Coupon

New Universal Brochure

A condensed, 20-page, two-color catalog is available from Universal Engineering Corp. The manufacturer's line of crushing, screening, washing, loading, feeding and conveying equipment is described, with photographs and specifications. Universal Engineering Corp., 625 "C" Ave. NW, Cedar Rapids, Iowa.

734/Circle on Reader's Service Coupon

Hand Pallet Trucks

A one-ton capacity hydraulic hand pallet truck is illustrated, with specifications and on-the-job photos in a new flyer issued by the Raymond Corp., 127-150 Madison Ave., Greene, N. Y. Bulletin 226.

735/Circle on Reader's Service Coupon

Eveready BrikSaw

Two new pieces are available. One is a six-page, three-color pamphlet showing the complete line of 2 HP BrikSawmatic and BrikSaw. The other is a 12 page folder giving prices on all Eveready equipment and blades, and a masonry blade recommendation chart for cutting all masonry materials. Eveready BrikSaw Co., 1509 S. Michigan Blvd., Dept. 524, Chicago 5, Ill.

736/Circle on Reader's Service Coupon

Transverter Power

An 8-page bulletin describes the new Clark power train "package" designed by their Transmission Div. for off-highway and stop-and-go service. The three major components are torque converter, disconnect clutch and transmission. Included are cutaway diagrams, specifications and dimensions. Clark Equipment Co., Jackson, Mich., bulletin TV-100.

737/Circle on Reader's Service Coupon

DWIGHT B. HENDRYX

and Associates

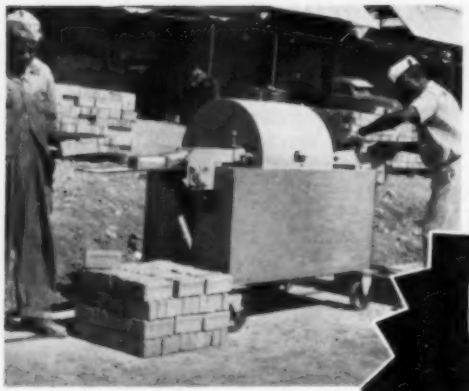
Engineers for
20 Refractories Manufacturers
40 Completed Projects

A Modern Brick Manufacturing Plant

Face Brick Plants,
Sewer Pipe Plants,
Refractories Plants
Alterations
Improvements

Grinding and
Batching Plants
Drying Rooms
Dryers
Tunnel Kilns

6621 DARLINGTON RD.
PITTSBURGH 17, PA.



U. S. PATENT NO. 2,801,626
FOREIGN PATENTS PENDING

ROCKFACER pays for itself in 90 days or less. Eliminates slow, costly, inaccurate hammer-and-chisel methods. Assures a straight-chipped edge for laying a neat course quicker. Simple and sturdy for long-life operation.

AMERICA'S NEW AND ONLY

ROCKFACER

. . . transforms 2000 second-grade bricks per hour — inexpensively — into NUMBER 1 ROCKFACE BRICK. Take an order one day, deliver it the next! Thousands of dollars per month "salvage" reported by brick manufacturers throughout the United States and Canada, who acclaim ROCKFACER the wisest investment they've ever made.

QUICKLY CONVERTS CULLS INTO PREMIUM BRICKS

SEND SAMPLES OF YOUR BRICK . . .
Let us put them through the ROCKFACER, and return them immediately. YOU judge the new profit possibilities this ROCKFACER offers. Prices and specifications on request.

ROCKFACER CO.
503 Hickory Tree Rd.; P. O. Box 547, MESQUITE, TEXAS, ATlantic 5-5297

WE CAN DELIVER*. . .

★ SOFT MUD BRICK MACHINERY
★ PUGMILLS
★ ROLL CRUSHERS
★ DISINTEGRATORS
★ GRANULATORS
★ WINDING DRUMS
★ SAND DRYERS
★ MOULD SANDERS

*POTTS ENGINEERING AND MANUFACTURING FACILITIES ARE AVAILABLE FOR IMMEDIATE PROCESSING OF YOUR ORDER. THIS MEANS MINIMUM DELIVERY TIME.

WRITE, WIRE, OR TELEPHONE FOR COMPLETE DETAILS
OR
ASK ANY OF OUR SATISFIED CUSTOMERS

REMEMBER
POTTS — FOR QUALITY CLAY MACHINERY
ESTABLISHED 1885
C. & G. POTTS & CO.
INDIANAPOLIS, INDIANA

The Demand Is Increasing For
GRAY BRICK and RICHER DARK RED SHADES

"NATIONAL" MANGANESE

Turn Buff and Light Clays Gray

Flashes Red Clays to Dark Reds, Blacks and Gun Metal Shades

Write for information.

NATIONAL — ALWAYS UNIFORM — ESTABLISHED 1904

NATIONAL PAINT & MANGANESE CO.
Lynchburg, Virginia

TRADE NEWS

Net Sales of **The Yale & Towne Mfg. Co.**, New York, N.Y. during the first quarter of 1957 totaled $32,529,110, an increase of 4.4% over sales during the same quarter last year.

Sales volume reached a record level of $6,661,114 for the first quarter of 1957, **Foote Mineral Co.**, Philadelphia, Pa., recently reported. Also, the company will apply to the New York Stock Exchange for listing of its common stock.

Plans to move all administrative and executive activities of **Sun Chemical Corp.**, Long Island City, N. Y., to New York City, have been announced by President Norman E. Alexander.

In his new position at **Hyster Co.**, Portland, Ore., Philip S. Hill, executive vice-president, will be in charge of over-all operation.

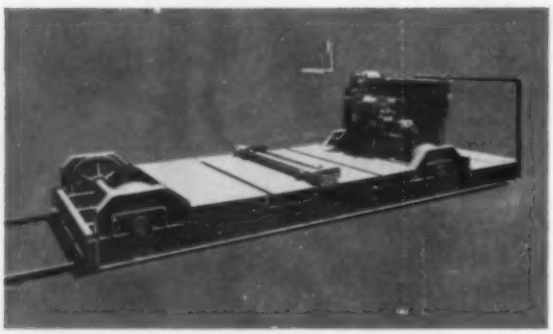
Appointment of Don Fricker as General Supervisor, Industrial Advertising and Sales Promotion, for the **J. I. Case Co.**, Racine, Wisc., was announced by Leonard V. Owen, Advertising Manager.

Three new dealers have been appointed to sell and service the fork-lift trucks, straddle carriers and powered hand trucks produced by Industrial Truck Div., **Clark Equipment Co.**, according to L. A. DePolis, general sales manager.

Two men were appointed to new sales positions in the **Link-Belt Speeder Corp.**, Cedar Rapids, Ia. Dave Van de Roovaart was named assistant sales manager, and Duane DeLong was promoted to district representative for the Mid-Southern territory.

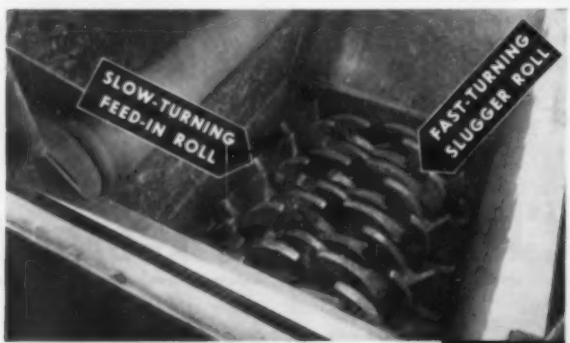
ENGINEERING ASSOCIATES, INC.

P. O. BOX 5284 **ASHEVILLE, NORTH CAROLINA**



The Hydraulic Transfer Car is the only car on the market with a truly variable speed. Starts and stops are smooth regardless of operator or severe service. Hydraulic drive allows use of such auxiliary equipment as pusher cylinder on car to pull on and push off kiln cars, and even charge dryers. Sliding position locks not required because of hydraulic lock when car is stopped.

Represented By: **Forrest A. Paschal**
Box 289, Siler City, N. C.



THE EAGLE IS THE CRUSHER WITH THE BIG APPETITE!!!

The slow-turning feed-in roll and opposing fast-turning slugger roll positively break up clods of clay or shale as fast as the rolls can get their teeth into them.

Clays or shales are crushed down to ideal size for feeding to dry pans, grinders, or smooth rolls.

The exclusive cutter-crusher-hammermill action of the Eagle Clay Crusher plus its low maintenance cost, is saving money for a great number of brick and tile, refractory, and sanitary ware plants. Three sizes. Send for Bulletin 952.

THE EAGLE LINE

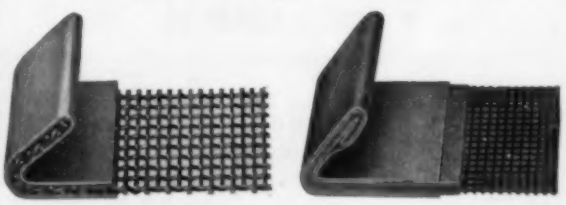
GRINDERS

CLAY CRUSHERS

SHALE PLANERS

EXPERIENCE, PROGRESS, SERVICE, SINCE 1872
EAGLE IRON WORKS
131 HOLCOMB AVE., DES MOINES, IOWA

Tyler Screen Sections for All Makes of Screening Machines!



Screen sections of Tyler Woven Wire are fabricated for all makes of vibrating screens in any mesh or metal. They are made up with hook-strip or bent-edge construction to suit the machine on which they are to be used.

Tyler rugged, accurately-applied hook-strips make possible stretching and maintaining the screens at drum-head tension, which is essential for successful screening and long screen life.

THE W. S. TYLER COMPANY
CLEVELAND 14, OHIO
Manufacturers of Woven Wire Screens and Screening Machinery
Canadian Plant—St. Catharines, Ontario, Canada

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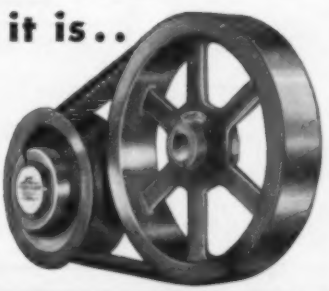
here it is..



New VARIABLE SPEED DRIVE
an easy, economical way to vary driven speed

By simply turning an adjusting screw, on either side of the sheave, both flanges move simultaneously and speed changes are obtained quickly and easily. Positive clamping of the two adjustable flanges eliminates fretting corrosion. Single wide range belt for motors 5 to 20 horsepower provides speed range ratios up to 3 to 1 . . . no lubrication . . . less shaft overhang . . . sensibly priced and economical in operation . . . send for Bulletin #796 for detailed information.

T. B. Wood's SONS COMPANY
CHAMBERSBURG, PA.
Mechanical Power Transmission Manufacturers—Since 1857.
CAMBRIDGE, MASS. • NEWARK, N. J. • CLEVELAND, OHIO • ATLANTA, GA. • DALLAS, TEXAS
"Our 100th Anniversary"

General Superintendent WANTED

For large modern brick plant in northern Ohio. Must have face brick experience and complete knowledge of tunnel kilns. Excellent opportunity. Write giving full details as to age, experience and salary desired.

Address XY-10, care of BRICK & CLAY RECORD

Classified Advertisements

Notice

New Classified Advertising Rates

Effective January 1, 1957

Limited to Want Ads, Consulting Engineers, or Used Equipment ads, (wanted or For Sale.)

TRANSIENT WORD ADS: 12c per word for each insertion.

Headings such as "Wanted", "For Sale", etc. and address to be counted as part of the ad. Minimum charge $2.00 each insertion.

POSITION WANTED ADS: $1.50 for 25 words or less; each add'l word 10c.

FOR USE OF BLIND ADDRESS: (Care of BRICK & CLAY RECORD) count as 15 words to cover cost of handling and forwarding replies.

DISPLAY-BOX TYPE ADS

$15.00 per inch. On advance orders for twelve consecutive issues, 12.00 per inch per insertion. (No retroactive adjustment).

An inch is measured vertically on one column, 2¼" wide; three columns on a page. For a two-column advertisement add together height in each column.

Display classified advertisements are set and rates apply in half-inch multiples. (1 inch minimum; 5 inch maximum).

Add 25% to above rates for Reverse Plate (white lettering on black background).

All rates based on payment in advance except on regular contract.

No Agency Commission or Cash Discount

BRICK and CLAY RECORD

5 South Wabash Avenue, Chicago 3

WANTED—HELP

Experienced Ceramic Engineer to work under our Director of Research and Development. Problems on body and glaze development and new products. Permanent. Room for advancement. Robinson Brick and Tile Company, P.O. Box 1619, Denver 1, Colorado.

WANTED—Superintendent with experience for operation of large beehive brick plant. Located central N. C. A real opportunity for improvement with a growing company. All replies confidential. Address XY-5, care of BRICK & CLAY RECORD.

WANTED — Superintendent for Salt Glazed Structural Tile Plant. Operating 10 kilns, Coal Fired. Unlimited opportunity. Plant located at Carbon, Indiana. Write Kalamazoo Tank & Silo, 508 Harrison Street, Kalamazoo, Michigan.

FOREMAN WANTED

Man, aged 30-45, wanted to assist superintendent in tunnel kiln production of face brick. Must have experience in operation of production machinery and supervision of men. State details of work experience, education, etc., in your own handwriting.

Address XY-8, care of

BRICK & CLAY RECORD

WANTED — POSITION

GRADUATE ENGINEER—Age 37, with long extensive experience in tunnel kiln operation desires job in production. Address XY-6, care of BRICK & CLAY RECORD.

GENERAL MANAGER OR SUPERINTENDENT—Thirty years' experience in production and marketing common brick, face brick and structural tile. Available at once. Address 8-HM, care of BRICK & CLAY RECORD.

GRADUATE ENGINEER—If you plan to build a tunnel kiln, I have the experience of many years with well-known kiln company, in design construction ad operation. Desire job in brick or other heavy clay plant. Address XY-4, care of BRICK & CLAY RECORD.

REFRACTORY REPRESENTATION in Mexico —American engineering firm opening office in Mexico for refractory masonry construction desires to handle refractories in Mexico and Central America. Address XY-3, care of BRICK & CLAY RECORD.

REFRACTORY LINES WANTED—Sales engineering organization wishes to represent refractory manufacturers in the Southeast. Agency or distributorship. Address XY-2, care of BRICK & CLAY RECORD.

SALES—CERAMIC Engineer desires sales position, 9 years plant and field experience including raw material and process equipment sales. Married, age 33. Address XY-1, care of BRICK & CLAY RECORD.

POSITION WANTED—By Graduate Ceramic Engineer with medium or large organization to rectify and standardize forming, drying and firing operations for a loss operation. Has had extensive experience in all branches of clay products including automation. Address XY9, care of BRICK AND CLAY RECORD.

FOR SALE—USED EQUIPMENT

FOR SALE

BRICK MACHINES—All types
PUG MILLS—Single & Double Shaft
GRANULATOR—Freese P16, Chambers No. 51
AUTOMATIC CUTTERS—Steele 18, American 498, Freese C-20 & C-25, End Cutter
HAND CUTTERS—Steele 50 Board Delivery

16 CU. FT. PATTERSON-KELLEY TWIN SHELL BLENDER

DRY PRESS 4 MOULD—Boyd "Special"
DRY PANS 7' & 9'
HAMMER MILLS — Jeffrey 20x24, 36x42, 6x15, Miller 17".
SMOOTH ROLLS—Chambers 16x30, 18"x24"
CONICAL ROLLS—Brewer 32", Chambers 32"
DISINTERGATORS — Chambers 16", 24", Steele 12", 18"
JAW CRUSHERS—15 x 24, 20 x 4, 20 x 36, 30 x 36, 56" x 72"
PULVERIZERS—Williams Comet Dust Mill; Raymond Lab Size
ROTARY DRYERS & KILNS
DRY MIXERS—Lancaster EBG-3, EAG-3, EAG-4, Clearfield # 610
SCREENS—Hummer 3 x 5 & 4 x 5 Single, 3' x 10' Double, Selecto 3 x 6, Slip Lawns, 42" x 10' Cedar Rapids
REPRESS 2-MOULD—Bonnot "Special" & International Victor
CLAY FEEDERS—Disc 48" & 60", Steele Even, 30" Reciprocating, Apron
DRYER CARS—200 Single Deck
TURNTABLES—72" Transfer Cars
SIDE DUMP CARS—2 yd. 26" gauge, 1 yd. 24"
PEBBLE MILLS—30 x 42", 4 x 5', 6 x 8', Hardinge 7' x 22", 7' x 48", 4½' x 16".
BALL MILLS—Hardinge 6' x 22", 6' x 36", 10' x 48", 2' x 8", 5' x 21' Tube Mill
STEEL PALLETS—10 x 24", 10 x 41", 14 x 20"
SLIP PUMPS—2 & 4 Cylinder
FILTER PRESSES—13, 32, 60, 70 Leaf
NAGGER PRESSES—#2 Crossley with Dies
KILNS—Decorating, high Fire Glass, & Lehr

ROBERT L. CLARE

PERTH AMBOY, N. J. Phone Hillcrest 2-6061

WALTER C. STOLL & SONS

New and Used

CLAY WORKING MACHINERY

5028 Alhambra Ave., Los Angeles 32, Calif. CApitol 2-1141

CRUSHERS, JAW—7½ x 13 Champion, 20 x 4 Farrel, 15 x 24 Traylor & 15 x 24 Diamond Primary portabl plant.

CRUSHERS, ROLL—24 x 24 L.B., 30 x 30 Jeffrey single, 18 x 24, 30 x 16 smooth, 18 x 16, 24 x 12, 24 x 18, 30 x 16 Disintegrating.

DRY PANS—7½ American, 9' Bonnot, 9' Stevenson, w/motor drives.

SCREENS—3 x 5 (1) Universal (new), 3 x 5 (1) & 3 x 10 (2) Tyler Hummer, 3 x 10 (2), 42 x 10 (2) Cedar Rapids, 4 x 20 Rotary, 5 x 12 (2) Robins eliptex.

HAMMER MILLS—M20 Quaker City (7½ HP) new, Mikro 2 S1 (10 HP), Williams AKB (25 HP), Jeffrey 36 x 42 (125 HP), Penna. 8XT13 (350 HP synchronous).

PUG MILLS—7' Steele, 9' Freese, 10' Chambers double shaft, 15' Granulators Freese & Chambers.

BRICK MACHINES—Brewer 9B, International 470, Bonnot #30 & Bonnot de-airing 18" Auger (w/new spare parts).

CUTTERS—Automatic Freese C20, C25, Steele 18 (10" belt), Steele 14B w/14" Belt, 2 spare reels.

DRYER CARS—225 single deck 35 x 84, guage 24"

LAWLER COMPANY

Metuchen, N. J. Liberty 9-0245

Pulleys of various size, face and bores.
Electric Motors, various H.P. and speeds.
Brewer Heavy Duty Conical Roll Crusher.
Steele No. 5 Hoisting Drum for pulling up cars.
Kiln Cooling Fans, 48 and 24", Motor Driven Propellers.
Motor Driven Dryer Car Puller, complete with shafting, clutches and cables for 20 tunnels.
200' Clay Storage Shed Conveyor, 26", motor driven.
Towmotor, 4000# cap. with Bickerstaff fork. Practically new.

Address inquiries to GRANT BRICK WORKS

Weldon, N. C.

Complete auto Boyd BB DRY PRESS setup
POTTERY PLANT EQUIP. 40,000 CAPY. DAILY
DRYERS: 4x20, 5x24, 6x30, 7x36, 9x50, 10x78
Boyd 4 mold, Gates 2 mold DRY PRESSES
BRICK MACHINES: DEAIRING: Steele 40, Intl 846, Bonnot 497, Amer 404A, & 290. FRH WJ6
MILLS: 3x8, 6x8, 6½x6 Ball, 2222, 3033, 4033, 3660, 1319, 1524, 4½' Tornado Hammer
DRY PANS: 5', 7' & 9'
CUTTERS: Steele #18, Chambers 22, Amer 498B
CRUSHERS: Steele 1232, 1832, Brewer conical 1822, 1426, 2416 & 3018 roll
Vibrating, Rotary & Piano SCREENS, all sizes
CONVEYORS: 18x70, 36x151, 30x200 & 42x160.
Repres: Bonded Scale and Machine Co.

MID-CONTINENT EQUIPMENT CO. INC.

8321 Gannon St. Louis 24, Mo. WYdown 1-2826

DRYER CARS—Single deck, 24" gauge.
DRY PAN—Clearfield, good as new.
CRUSHER—McLanahan 18" x 24" Single roll.
ELEVATOR—825 Ley Bushed 16" x 8" buckets.
BRICK & TILE MACHINE—Chambers Royal. de-aired.
CUTTER—Steele 18B Left hand, tile reels.
BALL MILLS—6' x 8', 6' x 10' with motors.
CRUSHER—Ferrel Bacon 36" x 15", Champion #20 22" x 50".
MIXERS—Clearfield.

HERMAN A. HALL.

Wyomissing, Pa. FRanklin 24310

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ROTARY DRYERS: 9' x 30', 4'6", 4'6" x 32', 4' x 30", 3' x 24', 3' x 15'.
BALL MILLS: Patterson 5' D x 22' L; Allis Ch. 7 x 24' Compeb.
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Hammer Mills: Jeffrey 20" x 12" B, 36" x 24" B, 42"x36" — Cedar Rapids No. 3033 — Williams No. GA 60
Rotary Kilns: 4' x 60', 6' x 40', 8' x 72', 6' x 7' x 8', 8' x 125', 8' x 9' x 100', 1 - 30" x 14' 7" Chambers Pug Mill
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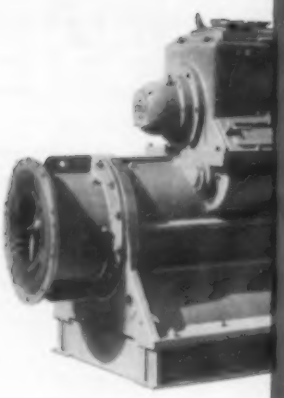

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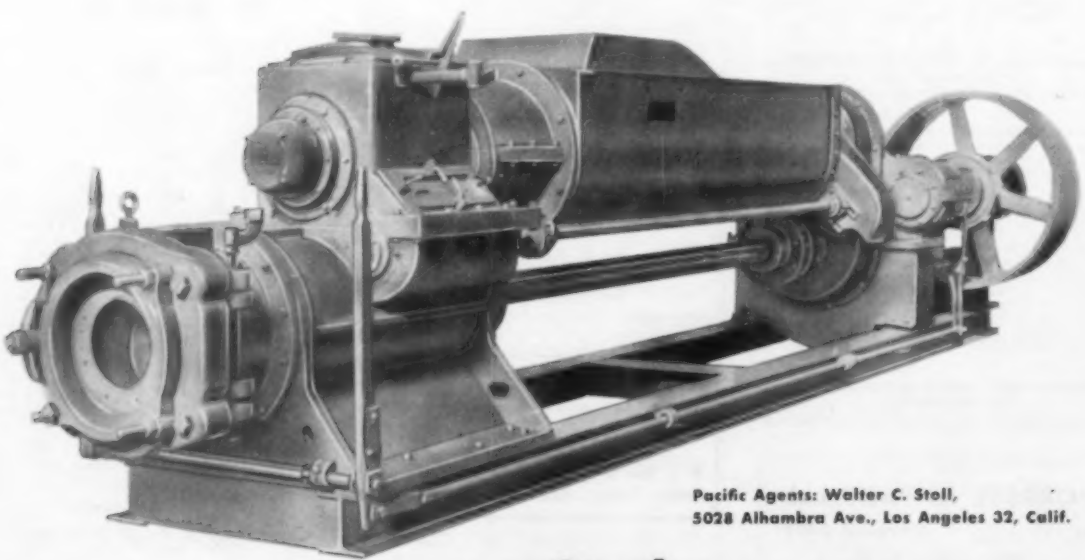

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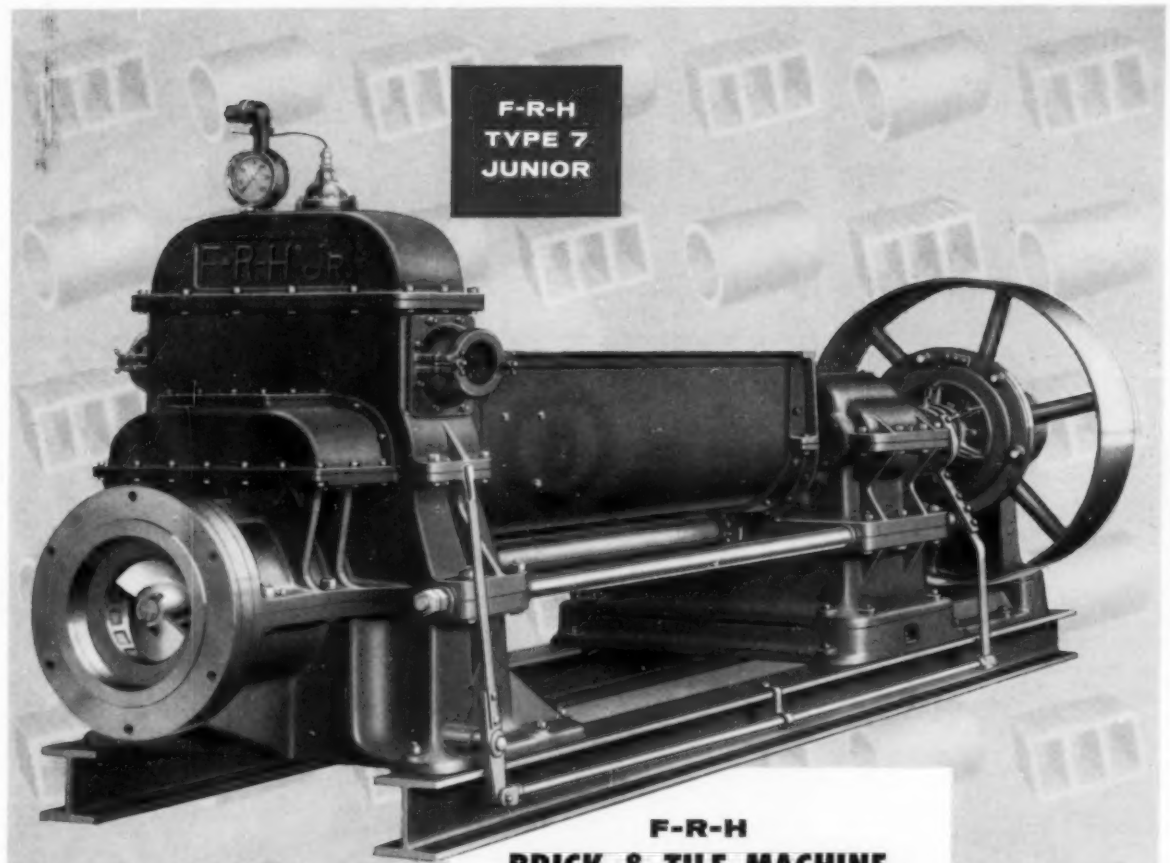

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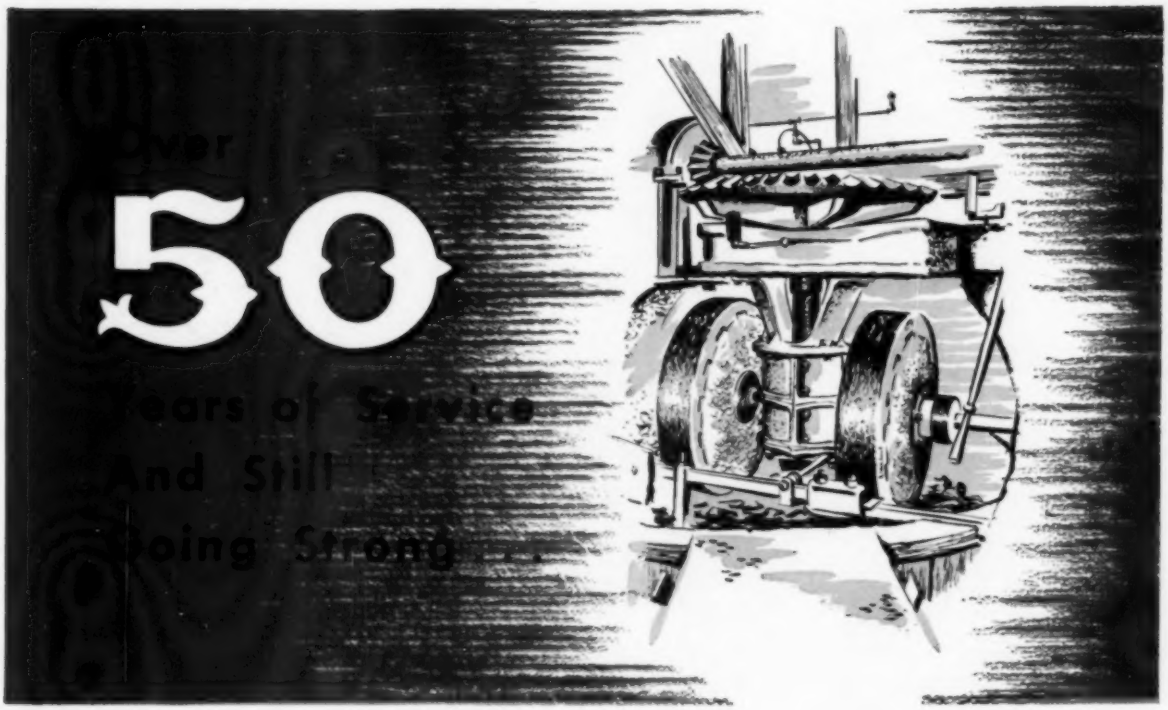

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